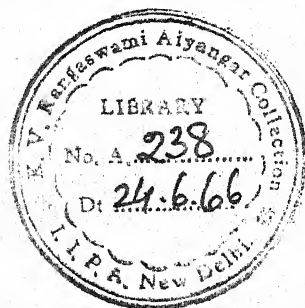


HOME UNIVERSITY LIBRARY
OF MODERN KNOWLEDGE

POLITICAL ECONOMY

BY

S. J. CHAPMAN, M.A., M.Com.



LONDON

WILLIAMS & NORGATE

HENRY HOLT & Co., NEW YORK

CANADA: WM. BRIGGS, TORONTO

INDIA: R. & T. WASHBOURNE, LTD.



HOME
UNIVERSITY
LIBRARY
OF
MODERN KNOWLEDGE

Editors :

HERBERT FISHER, M.A., F.B.A.
PROF. GILBERT MURRAY, D.LITT.,
LL.D., F.B.A.
PROF. J. ARTHUR THOMSON, M.A.
PROF. WILLIAM T. BREWSTER, M.A.
(COLUMBIA UNIVERSITY, U.S.A.)

NEW YORK
HENRY HOLT AND COMPANY



POLITICAL ECONOMY

BY

S. J. CHAPMAN, M.A., M.COM.

Professor of Political Economy and Dean
of the Faculty of Commerce and
Administration in the
University of Manchester;

Author of

"The Lancashire Cotton Industry,"
"Wages and Employment," etc.

LONDON
WILLIAMS AND NORGATE

PRINTED BY
THE LONDON AND NORWICH PRESS, LIMITED
LONDON AND NORWICH

CONTENTS

CHAPTER	PAGE
I INTRODUCTORY	7
II DEMAND	33
III SUPPLY AND ITS RELATION TO DEMAND .	63
IV MONOPOLY	93
V MONEY	115
VI INTERNATIONAL TRADE	145
VII WAGES, PROFITS AND INTEREST . . .	167
VIII RENT	124
IX PROBLEMS OF DISTRIBUTION	219
NOTE ON BOOKS	254
INDEX	256

PREFACE

POLITICAL ECONOMY is, and has been for some years, in a transitional state, which is proof of its vitality. On the one side it is becoming more abstract, and on the other side it is becoming more realistic. The two movements are not in the least opposed, unless in the sense that they act and react on each other incessantly to the great advancement of the study. Much modern Economic science is being increasingly assimilated in form and method to the Natural sciences. In chemical and physical laboratories which can pretend to any distinction realistic researching never stops; but speculation as regards the fundamentals of chemistry and physics continue and must continue. In the great laboratory of the world a multitude of realistic researches remain to be made by economists, and it is only as they are made that the science of economics will develop satisfactorily; but to attack the ultra-abstract and mathematical economists on that account, in the supposed interests of realism, is suicidal. Of this book speculative results of a very general kind are the substance.

I have to thank Mr. A. Fingland Jack, Lecturer on Economics and Commerce in the University of Manchester for his kind assistance with the proofs.

THE UNIVERSITY,

MANCHESTER, *June*, 1912

POLITICAL ECONOMY

CHAPTER I

INTRODUCTORY

THIS book is in no sense historical or concerned with social development. Its scope is confined to things as they are in communities which have reached a certain stage of civilisation ; and its purpose is to offer general explanations of these things, so far as they are economic, without tracing their evolution. Such explanations make up the elements of political economy, according to the commonest conception of that study. Business affairs will not be handled in this work in any great detail, but the fundamental characteristics of economic generalising of the kind indicated will be pretty thoroughly explored.

The explanations that will be presented are those which became current after the exact analysis begun by Jevons and Léon Walras had been perfected and applied to the whole field of economic phenomena by later writers,

particularly by Dr. Marshall. Though the new generalisations were suggested at many points by mathematics, it is perfectly easy to represent them in simple language which implies no mathematical knowledge; and I shall try so to do. Indeed the fundamental ideas in modern economic theory are by no means difficult to understand; and if therefore I should fail in my object it will be my fault and not the fault of the subject. Far from confusing simple issues the new work has clarified what was previously obscure and rendered economic theory easier for everybody to grasp; but at the same time it must be admitted that it puts a greater strain on the reader's powers of concentration, inasmuch as it rejects all vague conceptions and loose reasoning and insists on exactness.

Whatever be the method of treatment adopted, the scope or nature of economic studies calls first for discussion. The substance of economics consists in all economic facts. Economic facts may be described as any facts which have relation at the same time to man on the one hand and wealth on the other; and for our present purpose it is sufficient to think of wealth as made up of all the things desired by man which can be attained only with the expenditure of human effort. Now

economic studies are not by any means exhausted by economic theory. In order to comprehend of what distinguishable parts economic studies are constituted it will be desirable, perhaps, to consider how Economics began and how it has developed.

Economic studies originated, as so many other studies, in practical needs on the one hand and speculative curiosity on the other. In the conduct of business, and particularly in the relation of the State to the business activities of the community, problems which could not be solved offhand were met with; and many of these problems led to lengthy controversy. I may instance in particular the matter of the currency, and what the policy of the State should be with reference to its regulation; the matter of foreign commercial intercourse, involving the question as to whether a country is necessarily benefited or the reverse by every species of commerce with its rivals; and the awkward matter of obtaining resources for the State's activities, involving the question of the incidence of the burden imposed under different methods of securing them. It is comprehensible, therefore, that writings which could be classified as economic were not very late in appearing in the history of civilisation.

Now, if early economic writings be examined as a whole it will be found that considerations of quite different classes are included. We find in them questions of an ethical or moral character, concerned with the application of the ideas of the good and the just in social affairs ; and questions of somewhat the same order, though they are not strictly ethical but rather political, relating to the matter of prudence and expediency as regards State action. And besides these ethical and political questions yet others of different orders are met with. Controversy has arisen, for instance, with respect to the business policy which is most conducive to the wealth of individuals or the community ; and again, quite apart from practice, writers have sought the causes of certain effects. After noticing the various problems which are merged in unsystematic economic discussions taken in the mass, we shall find it convenient to make a division of economic studies somewhat like the following :

1. Economic Ethics.
2. Economic Politics or Public Economics.
3. Economic Arts.
4. Positive Economic Science.

A short definition of each of these groups may now be offered. Economic ethics is

concerned with what human actions should be in relation to wealth. Economic politics is all that part of politics, whether ethical or not, which has reference to economic facts. An economic art consists in a systematic exposition of the methods by which a given end may be attained. Positive economic science—which I call “positive” in order to make plain that its inquiries do not proceed from the ethical point of view—takes as its object neither more nor less than the explanation of economic data in the manner of the natural sciences, or, as we may put it, the tracing of cause and effect in the economic universe. This book will be confined to matters which lie unmistakably within the sphere of positive economic science; but it goes without saying that it has not been possible to do more than indicate the broad scientific results which have hitherto been achieved within this sphere.

A systematic treatise on economics was comparatively late in presenting itself. In England the first work of this kind which was at all satisfactory and approximately complete was Adam Smith's *Wealth of Nations*, but before its publication much valuable economic writing had appeared in this country from the pens of Mun, North, Child,

Locke, and Petty in the seventeenth century, and in the next century from the pens of Hume and Steuart, not to speak of Defoe. Nobody who desires to become familiar with political economy should neglect, if not to scan minutely, at least to skim and taste the *Wealth of Nations*. In this great classic an intermixture of different aims and points of view will be met with, which is only to be expected when it is borne in mind that Adam Smith's position was at the beginning of modern social philosophy. Divergencies in point of view and aim had not then been clearly distinguished. So in Adam Smith's stupendous treatise on political economy the ethics in the discussion of value, the maxims of conduct and the partly metaphysical defence of self-interested action kept astir by competition—the providential effects of which are never established—need not excite astonishment. The astonishing thing is that the portions of the *Wealth of Nations* which are positive science proper are as good as they are. And nothing that is said here must be taken to imply that economic studies which cannot be classified as positive science are of little worth. On the contrary, I should hold that the time devoted to the positive science of economics is largely justified by the value

of its results to these other studies and to practice. My point rather is that Adam Smith had not clearly envisaged a positive science of economics, and possibly had not sufficiently severed in his mind the purpose of natural science from other purposes to enable him to avoid confusion of issues. It is only, however, when the mind's eye is kept fixed on one aim, at one time at any rate, that rapid progress in knowledge can be looked for. The pure scientist generally leaves the practical application of his discoveries to others; and practical application may hang years behind.

It was left to Ricardo to unravel from the tangle in which he found them the portions of political economy which treated of cause and effect, and to give to many of them a more scientific finish. But even Ricardo, despite the cold light of his purely scientific interest, was not entirely successful. And there followed others who were amazingly successful in confounding the dry scientific point of view with a conception of society as a system of unemotional atoms, or worse, with the idea that a soulless mechanism driven by self-interest as the motive power was the right thing to aim at. By the doctrines of these blundering teachers—for whose mistakes,

however, the masters of the new-born science were in some measure responsible—political and social sentiments were contaminated; and the country was condemned to pass through one of the greatest crises in its history, that occasioned by mechanical invention and the introduction of steam-power, without benefit of much mutual helpfulness and sympathy. Said the Duke in *Coningsby*, “Supposing a case of outdoor relief——.” “I could not suppose anything so absurd,” replied his son-in-law, who was chairman of one of the newly-constituted Boards of Guardians. Nobody can feel quite confident in passing sweeping judgments on bygone events; and it may have been that grave errors in resisting progress were avoided in consequence of the austere teaching of the dominant political economy, and that men were made hard enough and pushing enough to win their way through when, in accordance with its maxims, they were left to depend on themselves alone—

“Stern, rugged nurse, thy rigid lore
With patience many a year they bore!”

But that much of the reason for which *laissez faire* was recommended and practised originated in mental confusion must

be sadly confessed. It is significant that Dickens felt called upon to defend the crime of poverty in the *Chimes*, and to attack the economic man in *Hard Times*. By many readers to-day these tales may be ranked among his inferior works by reason of their exaggeration, but had such critics lived in his day it is possible that the exaggeration would have seemed but legitimate artistic emphasis. Ruskin was another writer who felt sure that there were wrongs to be righted ; but, while Dickens appealed to human emotions, he for his part set himself to the task of searching out the errors of reason wherein social wrongs found their source. Unfortunately for political economy, Ruskin in his generous enthusiasm was for root and branch destruction. Falling into the same fundamental error as the popular political economists, in confounding precepts with laws, and, while brilliantly suggestive, adding to the confusion by overlaying the positive with the ethical point of view, he denounced not merely the appalling economic maxims which were passing current as political economy but also the scientific generalisations relating to the causes of economic phenomena, the truth and serviceableness of which should have been apparent.

In the above paragraph events have been

somewhat anticipated. Before the assault on political economy came to a head, Senior and the younger Mill had succeeded Ricardo. The elder Mill and Malthus—in part discoverer, in part inventor of the “revolting ratios” between food and population, the fundamental notion of which, nevertheless, contained “a very valuable discovery, or ‘like the toad, ugly and venomous, had yet a precious jewel in its head,’” as Hazlitt unflatteringly put it—these two had worked contemporaneously, partly in collaboration and partly in rivalry with Ricardo, on the general principles of economic science; and to them, as well as to him, an important step in its development must be attributed. John Stuart Mill improved wonderfully on Ricardo and wrote a treatise to which little exception could be taken on humanitarian grounds, but the public notion of what political economy taught had already been created and its dissemination was continuing. Nevertheless we can hardly ascribe anything path-breaking in the progress of economics to Mill. His most important contribution, perhaps, was to put together, develop, extend and combine in a coherent system the ideas of the school in which he had been brought up, and at the same time somewhat to soften their outlines. But to do this a master mind

was needed, capable of viewing things in the mass, and at the same time of grasping details and bringing them into harmonious relations with one another.

In the works of John Stuart Mill the old political economy draws very near its end, and much of the new political economy is foreshadowed and inspired if not actually begun. For the crystallisations of the old school Bentham was in no small degree responsible; a man of whom Hazlitt wrote:—"Mr. Bentham turns wooden utensils in a lathe for exercise, and fancies he can turn men in the same manner. He has no great fondness for poetry and can hardly extract a moral out of Shakespeare. His house is warmed and lighted by steam. He is one of those who prefer the artificial to the natural in most things, and think the mind of man omnipotent. He has a great contempt for out-of-door prospects, for green fields and trees, and is for referring everything to utility. . . . It is indeed the great fault of this able and extraordinary man, that he has concentrated his faculties and feelings too entirely on one subject and pursuit, and has not 'looked enough abroad into universality.'" Making "the mind of man omnipotent," while conceiving of the reason-

able too narrowly and too superficially, was the characteristic vice of the age. Even the opponents of the political economists fell victims to it: Godwin, the visionary, attempted (in vain) "to pass the Arctic Circle and Frozen Regions, where the understanding is no longer warmed by the affections, nor fanned by the breeze of fancy." But Bentham, nevertheless, by his abstractions, though they represented human nature as far too simple—indeed, one might say, because they did so—gave to economic science an impulse which has endured up to the present time. The data of the science were rendered manageable; and when its fundamental ideas were revised it was happily found that not demolition and reconstruction of the science, but rather adaptation, re-facing and extension were involved. It is nothing new in the history of thought that a study founded on false hypotheses should embody a framework of permanent value. Physics so frequently alters its hypotheses that physicists themselves may be left behind. But on each occasion the science of physics does not collapse; on the contrary little has to be sacrificed; and in its unchecked building up we are presented with the spectacle of scholars working on different hypotheses, but

working nevertheless harmoniously, perhaps in collaboration, and achieving together results that stand. Little serious and sustained reflection by men of judgment has been productive of results which are wholly or mainly ephemeral.

After John Stuart Mill the progress of economics bifurcates. On the one hand the analytical method was perfected and on the other hand induction and history began to play a distinctive part. We shall first notice the improvements in analysis; for it is chiefly to the broad results of these that the present volume will be devoted. Finally some consideration must be given to the claims of induction and history.

Duly to assign credit with regard to the discovery and development of new ideas is a difficult and thankless task, which will not be essayed here. Suffice it to remark that among the most original workers in connection with the advance of analytical economics Jevons and Léon Walras stand out prominently, and that to Dr. Marshall belongs the distinction of having realised the far-reaching application of the new ideas, of having refined them and brought out unsuspected implications, and of having presented economic phenomena unified for the first time in

an all-embracing theory. The method developed by Dr. Marshall may be called the marginal method; and associated with it in the most convincing modern speculations is the conception of individual experience, and even of society, as an organic whole. The two chief notions in economic theory to-day consist in seeing each item of experience as in continuous relation with the rest of experience, and in explaining the definite results reached in economic affairs—the consequences of demand and supply, to use the expression sanctified by long usage—as largely brought about by the differences made to the totality of experience by the final activities of producing and consuming. It is difficult to expound these notions in brief, but their import will be brought out in each of the succeeding chapters of this book. On completing his perusal of what follows, the reader who returns again to this page will see on the instant what its vague phrases mean. In the technical language of mathematics the chief part of the explanation of economic value, whether revealed in the prices of goods or the rates of international exchange, or the level of wages or the amount of interest, is to be found in the differentiation of economic experience—in observing the differences made to the

value of goods by small changes in their supply, the differences made to the worth of capital by slight accessions to its quantity, the differences made to the burden of labour by some lengthening of the hours of work, and so forth. The marginal theory has been caustically described as the theory that the tail wags the dog. There is a certain truth in the remark; but the intended jibe, instead of nailing a fallacy to the counter, draws attention to a highly significant fact. In the determination of value it is the last steps that count—the last step on the side of demand, and the last step on the side of supply.

Foreshadowings and even partial applications of the marginal theory may be discovered in the old economics; but it is one thing to understand the essential nature of a particular kind of causation and detect its workings in apparently dissimilar actions and reactions, and another thing to give now and then a reason for phenomena implying the same kind of causation, without being alive to its peculiarity and far-reaching influence. "Demand" and "supply" used to be the magic wands for solving all economic problems,—and in the worst days of error they were indiscriminately applied to everything "from

religion to a shoe-black," as Leslie Stephen expressed it—but the conceptions of demand and supply were seldom precise, and were not infrequently erroneous. They proved as treacherous to the inexperienced as the conception of evolution has proved since to shallow thinkers in the biological and mental sciences. Theories tend to crystallise into formulæ expressing half-truths, and these get to be fitted unthinkingly to facts to which they are alien. In this connection it behoves us to bear in mind that the marginal theory, like the old notions of demand and supply, will increasingly cease to be an exception to the rule. Already, indeed, instances could be recorded of pontifical pronouncements, made on the strength of mechanical resort to the marginal theory, where a penetrating study of the living facts could alone justify even the least dogmatic of utterances. To the limitations of the use of the marginal theory and the need of supplementing it invariably with direct observation, reference will be made again and in more detail.

It must now be our aim to get a grasp of the nature and difficulties of scientific explanation within the economic domain. It has been declared by some that society

as an organic whole does not lend itself to analysis. By the statement that society is an organic whole is meant that no one set of human actions can be regarded as wholly unconnected with any other set of human actions taking place in the same community. Each society, it is asserted—and we may allow at once rightly asserted—presents an organized system of activities covering all that happens at one time and reaching backwards into the past and forwards into the future. A simple illustration can readily be furnished. My demand for a particular book to-day—say, for Pareto's *Cours d'Économie Politique*, which at the time that I write is out of print—is dependent (a) upon my possession of other things, which gives to this want the opportunity of expressing itself, or may even be partially responsible for its existence; (b) upon my education and circumstances in the past; (c) upon my ideas and determinations as regards my future; and (d) upon the tastes, acquirements and possessions of my fellows. This being so, to take out the demand in question and try to study it as an independent specimen is to imply an atomistic view of social functioning which is in conflict with

experience, and is bound to lead to error—so it is alleged. It is no less mistaken than to think of the brain as related to the lungs and heart as one stone is related to another in a heap by the road-side. The only possible social law, it is asserted, must be of such a form as to connect the whole state of society at one time with its whole state at another time.

This line of argument is so plausible and embodies so much truth that those who are converted by it may well be excused. But the more persistent of those who are predisposed to believe that a rationalistic account—which may not be the whole account—of all experience is possible will more closely scrutinise what is supposed to block their path. On doing so they will detect first that the arguments opposed to them prove too much. If they are through and through sound all the biological sciences are in a quandary; but we know they have been successful in framing convincing generalisations relating to the facts of life. The reason for their success is that the mental abstraction of one thing from another is possible even when the physical separation of the one thing from the other is not feasible; and experience, which is the ultimate test of the correctness of all laws,

shows that the results reached on the basis of a discriminating mental abstraction (that is the imagined separation of things that may be inseparable) hold with approximate accuracy. A brain specialist may study the brain alone, broadly speaking, though no brain could survive when severed from the body with which it was united. Similarly we may study the economic activities of a group of people, ignoring their religious and political instincts as such, that is, so far as they are not expressed economically, though these instincts are an integral part of human nature ; or, again, we may study the economic activities of one person, mentally separating him from the community of which he forms a part.

We may go even further in our defence of analytical economics, for there is this very important point to bear in mind, that many of the mental abstractions that we make as economists do not assume, even for the sake of argument, the isolated existence of things that cannot exist in isolation. Marginal abstractions merely confine us to noticing how changes in relation to a thing affect that thing. In other words, thinking now of the marginal method in economics merely, our abstractions consist merely in focusing attention on a thing and differen-

tiating the experiences relating to it, as I have put it. In the case of demand, for instance, we do not say, if we are careful scientists, that this book, taken as an isolated fact, is worth so much to a given person, because it cannot be thought of as an isolated fact. We merely say that this book makes a certain difference to the person in question which he values at so much.

Finally, let it be clearly understood that we are not treating of things as they would happen in a community of thoroughly selfish people who thought only of their own material circumstances—in short, we do not now begin our economics by postulating the scarecrow known as the economic man, as some early economists did—unless we are aiming at the roughest of approximations. On the contrary, we take people as they are, with their mixture of meanness and nobility, but in studying them from the economic point of view we ignore everything, for the time being, which, as a cause, is not economic, or, as an effect, is not an economic reflex. In brief, we abstract not motives and impulses of a particular kind, but only activities or aspects of activities of a particular kind. So when a recent writer exhorted economists “once and for ever to abolish the feverish, over-

strained, intolerably efficient spectre called the economic man," "the standard popinjay of science," who had, he imagined, "been so little injured by the criticism of half a century," he was addressing an audience in bulk as spectral as the spectre that he abjured.

There is another difficulty of which much has occasionally been made, namely, that we are dealing not merely with living creatures but with living creatures who seemingly direct their own lives. The fact that human beings have volition—"free will," broadly understood—is supposed to militate against any attempt to frame laws relating to their actions. They could always choose, if they liked, to break the supposed laws. A complete examination of this difficulty would carry us too deeply into psychology, but it may be remarked here (1) that much human experience, at any rate, is not a matter of choice—for instance, that connected with our bodily needs—and (2) that reason governs us and that as reasonable we act in a uniform way.

Side by side with this defence of deduction from the results of minute analysis, something must be said of the method which has sometimes been opposed to it, namely, induction from historical facts or every-day happenings. Of the fecundity of this induction, that is,

the method of watching, directly or in records, multitudes of facts with a view to discovering their causal relationships, whether it is applied to existing conditions or historically, everybody is fully convinced in these days. But pure induction is not a flawless method. It labours under the limitation that, though it can declare what is, it cannot unaided explain why it is. To explain why a law holds we must always have recourse to analysis. Nevertheless, induction is indispensable, and no more subordinate than deduction. The former indicates what needs to be explained; and to discover what needs explanation is sometimes far more difficult than to explain. Moreover, by separating from the seeming chaos of economic phenomena the sequences and co-existences which are repeated, it suggests uniformities, and thus gives birth to the soul of scientific explanation, the hypothesis. Further, its aid must be enlisted in the testing of hypothesis.

The broad generalisations of economics, as those of every other science, are concerned with tendencies. We are not, therefore, trying to discover exactly what happens at any moment of time, and it would not be of much value merely to describe the economic world to those gifted with powers of observa-

tion. Our object is to bring out the stresses and strains which broadly account for things as they are. We only fully explain a thing when we have completely isolated all relevant and appreciable tendencies at work, and estimated their several influences. But behind many of the things to be explained we discover a complicated system of tendencies within tendencies, some of which are long in bringing about their effects, and some of which would produce their effects in a short time were they not counteracted. In economics it is convenient, therefore, to distinguish between immediate tendencies, short period tendencies, and long period tendencies. The first are predominantly effective as regards immediate results. The second are those which are comparatively speedy in their operation. The third are the tendencies remaining. When in economics we ask what is the effect of a given cause we may mean by the effect, the immediate effect, the short-period effect, or the long-period effect. Let us take to illustrate the distinction a particular example. If the demand for steel increased, the immediate effect on price would be the resultant rise in the price of steel while the agents in production were left exactly as they were. The short-period effect would

mean the price attained after the employer had taken every possible step to increase his output, on the assumption that meanwhile no new machinery had been constructed, no new mines had been opened up, and no new labour had been specialized. The long-period effect on price would be the alteration in price ultimately reached after full time had been given for the change to work out its complete consequences, provided that no other change bearing upon the situation took place meanwhile.

The three ends distinguished above are not found in independent existence in the actual world, because all the tendencies to which we have referred are unceasingly acting together. The ends actually met with are the intermixed effects of compounded forces with shorter or longer time periods. It is in particular true of the long-period tendencies that their full economic results are never actually attained. Other changes, setting on foot other tendencies, are bound to intervene before a given change can eventuate in its final outcome. We may, therefore, be led to question whether a study of long-period phenomena fulfils any useful purpose; but a brief deliberation should lead us to an affirmative answer. The study is of value

for two reasons. It is of value, in the first place, because what actually happens frequently approximates to the long-period theoretical result though it never exactly corresponds with it ; and in the second place, because no movement can be understood till the forces producing it are understood, whether a force is ever left in unrestrained freedom for as long as it lasts or not.

The economics of this book will be concerned almost exclusively with long-period results. These results are known as normal. In contrast with them short-period results are sometimes described as the sub-normal. The reader must be particularly careful not to fall into the error made by a writer who complained that the assumption of the long-period expresses a "theory of perfectibility," and implies a "possible state of perfection in the material world." He judged that "it is difficult to be so confident about the present trend of our social and economic strivings as to continue to use the words 'in the long run' with any boisterous hopefulness." The reader will understand that the phrase "in the long run" expresses neither optimism nor pessimism, but simply that use is being made of the kind of hypothesis on which all deductive science is based.

The long-period result may be overlaid, so to speak, as the surface of the sea is by waves; but even when storm waves make the ocean a tumult tides still rise and fall.

Finally, it is to be remarked that the tendencies to be studied are measurable, and, indeed, are actually measured in the course of our every-day doings, in terms of money. Owing to this, more precise generalisations can be laid down than would be possible otherwise.

CHAPTER II

DEMAND

WE all know that ordinarily the lower the price of a thing the larger is the quantity of the thing that can find purchasers. The economist tries to state precisely the truths, with their limitations, underlying this superficial knowledge. It is usual in elementary works on economics to trace the relation between price and purchases to the relation between the utility of things and their supply ; but, before proceeding to bring out the exact connection between utility and the consumption of articles and services, we must make up our minds as to the implications with which the term "utility" is to be invested in this work.

The term "utility" used to have in economics a meaning far different from that which is customarily assigned to it to-day. In the mouths of the philosophers known as Utilitarians, the utility of a thing meant its power to excite pleasurable feeling which

was regarded as measurable. The so-called Psychological Utilitarians used to hold that we were impelled to our actions by this feeling element as motive force, and by its opposite; and the Ethical Utilitarians maintained in addition that it was right to allow ourselves so to be governed provided that the distribution of pleasure corresponded with the then conceptions of equity. To-day cautious psychologists shun dogmatising about the impulses which set on foot human action; and the economist has, therefore, learnt, or should have learnt, so to lay the foundations of his science in demand that no special views on the determination of human action are implied, and his science is not left in compromising company. The only thing of which we can be quite sure is that people choose one course of action to the rejection of another, and choose to buy one thing rather than another. When people select in this way, we may say that they exercise preference. Preference is the fundamental fact with which the economist begins the construction of his Science of Consumption. And it must be firmly grasped that the existence of preferences does not imply that people always seek self-gratification. We work for others as well as ourselves, and

frequently, for the best of motives, choose to do what we do not like.

It happens, however, that it is exceedingly inconvenient to speak of demand in terms of preferences, because bare preferences are expressible only in ratios, which are more awkward to handle than simple whole numbers. It is, therefore, customary to write of the utilities of things instead of the preferences for things, and to say, when one thing is preferred to another, that the thing preferred has greater utility than the other. For the sake of brevity I shall hereafter write invariably about utilities, but I shall understand by them merely the quantitative, objective expressions of preference; and the student would act prudently if he got into the habit, on reading about utilities, of registering a mental note to the effect that they do not convey any particular doctrine with regard to the determination of human action, but are merely symbols standing for the facts of choice.

We may now proceed to amplify and qualify the statement that the utility of things diminishes as we get additional supplies of them. We had better begin by carefully scrutinizing the management of income as a whole, and afterwards concentrate on a microscopic analysis of the relation between

utility and the possession of individual goods. We are in danger of slipping into making baseless assumptions, and therefore of reaching unwarranted conclusions, when we rashly skip examining experience in the mass and hasten to deal at once with questions of detail. Let us ask then, What is the relation between utility and income? bearing in mind that utility is to be taken simply as a label objectively representative of choice.

There can be no doubt that in all ordinary cases the utility which we get out of our incomes increases at a diminishing rate as income increases, at least after a time. We know this directly from our every day experiences, and it is not difficult to find subjective reasons for it. We always try instinctively to assuage our most urgent cravings first; consequently when fortune brings us an augmentation of income we realise, if we have not realised it before, that the desires left to be appeased are less intense than those which received prior attention. There are cases to which the generalisation does not apply, for instance, cases in which the whole character of a person's life is altered when his income has reached a certain figure, but such exceptions may be neglected for present purposes. The declaration that an

enlarged income is not accompanied by a proportional access of utility may be called the law of the diminishing utility of income.

Our first step in analysis having been completed, we may now pass on to inquire whether any propositions can be laid down connecting the utility of individual things with the quantity of them that a person possesses. It will be discerned at once that this enquiry can be conducted on three different assumptions. It may be supposed (1) that the person's possession of other things remains as before; (2) that the person's income remains as before, except for the addition of further increments of the article in question, but that the person is at liberty to rearrange the expenditure of his income laid out on other things if he so desire, or (3) that his income and the way in which it is spent may vary.

In the first case it is unquestionable that the utility enjoyed by the person can only increase, if it increases at all, at a diminishing rate very soon after consumption begins. Minute supplies of a thing might at first simply whet the individual's appetite if they had any effect at all, but as supplies increased they would take from the keenness of its edge. The same conclusion holds of the second case. But about the third case there is some doubt.

The utilities of certain things are closely dependent upon the supplies that we possess of other things, and as the supplies of these other things become more abundant the value of the first things might appreciate or depreciate. Consequently we must not affirm that to any individual so much of a given article means so much utility quite regardless of the degree and nature of his opulence.

Finally it must be remarked that the generalisation known as the law of diminishing utility is commonly understood to apply to the second case considered above and to allege that, income being constant, additional supplies of one article add to satisfaction at a diminishing rate.

It is very necessary that the distinction implied above between total utility and marginal utility should be made explicit. With reference to income, total utility is the sum of satisfaction which we derive from our aggregate outlay, while marginal utility is the addition made to total utility by the addition of another unit of income, say, by supplementing income to the extent of a shilling or a sovereign. Any unit of income that we please may be taken, provided that we make it very small in relation to the sum total of income. With reference to particular

articles or services, total utility means the loss of satisfaction which would be sustained by the complete withdrawal of that commodity or service, while the marginal utility means the addition made to our total satisfaction by the acquisition of the last increment of the commodity or service. The diminution spoken of in the law of diminishing utility refers to marginal and not to total utilities; though total utilities may themselves contract when people are encumbered with things of which they want no more, in which case marginal utilities are said to have become negative.

We are now in a position fully to grasp the conception of demand. We are said to demand a thing when we are prepared to offer something of value for it. When the offer is made in terms of money the offer is said to be a demand price. Now it will be apparent that a person will buy more of a thing when the price falls. In ordinary circumstances, since the marginal utility of a thing drops when a person gets more and more of it, price must be diminished if he is to be induced to purchase larger quantities. Thus, were the price of tea 18s. a pound, I would buy only one pound a year, say; but if the price were

12s., I would buy two pounds ; if 9s., four pounds ; if 6s., five pounds, and so on. We therefore realize that there is one almost universal law of demand, namely, that the lower the price of a thing which can be bought in any quantity, large or small, the more will any person buy of it if he buys any at all. In framing this law we must be particular to bear in mind that demand does not indicate just a quantity of the thing demanded, nor just a price, but on the contrary, many quantities and many prices, and even more, namely, the relations between quantities and prices. And we must be equally particular to remember (if we care about secure foundations) what has been said a few pages back concerning utility, and bear in mind that demands simply measure the ratios between preferences. So I should feel inclined to repeat my description of demands as "quantitative objective definitions of preferences," had not one or two critics opined that the unsophisticated would be unlikely to understand what the statement means.

At this point the distinction may be drawn between private or individual demand on the one hand and public, collective, compound or market demand on the other hand. The latter means the demands of all the people who

buy a thing, considered together. It is compounded, of course, of individual demands and obeys the same law. The lower the price the larger will be the amount bought. Those who purchased before will purchase more because of the law of diminishing utility ; and some who previously found the price too high for them will be enabled to buy a little.

In the study of many economic problems it will be found that the so-called elasticity of demand is an exceedingly fruitful conception. It applies both to individual demand and compound demand. Demand is said to be very elastic when a small drop in price causes a large addition to the amount sold. It is said to be only slightly elastic when a small drop in price means a small addition to the amount sold. Because of the law of demand formulated above, when price drops sales are bound to be augmented to some extent. In order to enable us to distinguish unhesitatingly between a comparatively elastic demand and a comparatively inelastic one, it is usual to adopt a conventional definition of the point at which the one becomes the other. This point plays the same part as freezing point with reference to temperature. Degrees of heat or coldness can be measured with reference to freezing point. So degrees

of elasticity in demand can be measured with reference to the elasticity which is termed "unity." Demand is said to have elastic unity when a fall in the price involves such increase of sales that the total amount paid for the aggregate of the thing sold remains the same. Beneath is represented a demand with an elasticity at first greater than unity, then equal to unity and finally less than unity. Let us suppose that the article referred to is some kind of soap.

Price per lb. in pence.		Total sales in lbs. per month.		Total receipts in pence per month.
10 ..	..	30	..	.. 300
9 ..	..	40	..	.. 360
8 ..	..	50	..	.. 400
7 ..	..	60	..	.. 420
6 ..	..	70	..	.. 420
5 ..	..	84	..	.. 420
4 ..	..	100	..	.. 400
2 ..	..	150	..	.. 300
1 ..	..	250	..	.. 250

The elasticity of demand is greater than unity between the prices 10d. and 7d., less than unity between the prices 5d. and 1d., and equal to unity between the prices 7d. and 5d.

One of the simplest generalisations in

economics is that which is known as the law of substitution, indifference, or equi-marginal returns. It is simple—so simple, indeed, that one might at first feel inclined to refuse it the dignified title of “law”—but its recognition, nevertheless, has led to the most far-reaching consequences in economic analysis. In a spirit of some exaggeration, one might liken its *rôle* to that of the law of the survival of the fittest in biology—another absurdly obvious generalisation. In fact, the two laws are not merely alike but akin; as is apparent when we take any example of substitution, say, substitution in consumption, which means the survival in choice of the things fittest to satisfy some direct or indirect demand. It frequently happens in science that the profoundest truths at first strike one as self-evident and unimportant.

The law of substitution, indifference, or equi-marginal returns, applies not merely to consumption but to every branch of economics. For the present, however, I shall define it in its application merely to consumption. With reference to consumption, the law points out that income will be expended in such a way that the marginal utilities of different things to any person will be made the same, when marginal utilities are reckoned with respect

to a common unit of expenditure. It declares that I shall so disburse my income over a given period on bread and tea and milk and clothes, that the marginal shillings laid out in acquiring each class of these things will be productive of the same utility. The truth of the law is easily established. Its proof proceeds (1) by showing that when a person's income is expended according to the law the utility derived from it is maximised, and (2) by arguing that each individual will try to maximise the satisfaction derived from his income. People are not compelled to do the best for themselves with the means at their disposal, but in the degree in which they are reasonable will they attempt to do so and succeed in doing so.

To demonstrate that the utility of income is maximised when the law of substitution is observed is a trifling task. Suppose that I so spend money on milk and bread that the last penny spent on bread yields more utility than the last penny spent on milk. In that case it would evidently be to my material well-being, other things being equal, to reduce my outlay on milk and increase my outlay on bread, because by so acting I should secure a utility larger than the one sacrificed. Gain could be reaped in this way, by transfer-

ence of income from the one line of expenditure to the other, so long as the two marginal utilities differed. Hence, I should try to get the two marginal satisfactions equal. What is true in this matter of two things is evidently true of any number.

There is a reason for most things, even for this law's profusion of names. Each name is appropriate and, in the absence of any fixation of terminology by convention, some writers have favoured one name and some another. The law is called the law of equi-marginal returns because when it is observed equi-marginal returns result. It is called the law of substitution because the end, equi-marginal returns, is attained by the process of substitution already described. It is called the law of indifference because, when it is observed, a person's scheme of expenditure is so devised that it is a matter of indifference to him whether he spends a minute accession of income on any one thing or on any other.

Before concluding our study of demand and expenditure, a few words are needed to indicate the extent to which the laws of demand and expenditure hold in actual practice. It may have been gathered from the exposition above that the individual is unceasingly engaged in balancing the utilities of different courses

of action against one another. It would seem to imply the conception of a person simply as an economic registering machine which automatically reacts. This would be an altogether incorrect conception. In the first place the individual does not merely register utilities objectively presented to him ; on the contrary he creates the utilities of which he takes account. It is his disposition and his purpose in life which determine what things shall have much value to him and what things little value. In the second place the registration of utilities, which are to be regarded as the product of a person's character and his contact with external nature, takes place to a large extent implicitly. Of much of our balancing of utilities we are unconscious ; the operation only becomes a deliberate one when the expenditure of comparatively large sums is involved. And in the third place this qualification of our doctrine must be admitted, that, as regards things which are very cheap in relation to our incomes, no doubt we make no attempt to bring their marginal utilities into relation with the marginal utilities of more expensive things.

We must always remember, not only that an individual's demands are the outcome of his upbringing and his surroundings as well

as of his independent individuality, but also that an individual's system of demand, taken as a whole, tends to settle into a particular form. Some appreciable shock is needed to shake it out of this form. Hence it is common to say that expenditure is settled by standards of life. By a standard of life is meant the common form which expenditure tends to assume in any given class of the community, or the modes of disposing of income which are typical of a class. For some purposes it is convenient to distinguish between the individual's standard of living and the standard of living of the class to which he belongs. The former is usually a species of the latter—the latter modified by his idiosyncrasies. It is only in exceptional cases that the standard of any person is actually in conflict with the standard of his class. The individual's standard is largely settled by his habits, and habitual action is universally more difficult to modify than action which is not habitual.

I intend now, despite its alleged difficulty, to introduce a conception about which there has been much controversy, but one which, nevertheless, in my opinion, is likely to play in the future a leading part both in the development of economic theory and in the practical application of economic teaching. It is one

of the subtlest generalisations wrung by Dr. Marshall out of the facts of experience after analysing them to the last dregs by the marginal method. The conception is known as that of consumers' surplus.

Consumers' surplus has been used in two ways: to indicate on the one hand a surplus of utility and on the other hand the expression of this in terms of money. The "surplus" in utility obtained by an individual from anything, consists in the utility which he obtains from that thing over and above the product of its marginal utility and the quantity of it that he consumes. It is called a surplus because it represents a gain which, so to speak, the individual gets for nothing. Let us take a particular example. Suppose a person consumes a dozen apples a week. The price he pays for apples measures the difference between the utility to him of twelve apples and the utility to him of eleven apples, in short, the marginal utility of the apples. He buys the twelfth apple because he thinks it is just worth his while to do so. For the sake of clearness of statement let us say that the marginal utility of apples contains ten units of utility—carefully bearing in mind at the same time that there are no such things as units of utility. Then, if

the person pays a 1d. for each apple, for the last penny which he is induced to spend on apples he obtains ten units of utility. So it is reasonable to affirm that the marginal utility of money to him contains ten units of utility. Because of the law of equi-marginal returns another penny spent by him in anything else would buy only ten units of utility. For the twelve apples he pays twelve pennies, which consequently represent a sacrifice of 12×10 units of utility, that is 120 units of utility. We may think of the 12 pence as withdrawn from expenditure on twelve other things, involving a marginal loss in respect of each of them amounting to ten units of utility. Now the total utility of twelve apples must be something considerably greater than twelve times their marginal utility, owing to the law of diminishing utility. If their total utility amounts to 210 units, the person whose case we are considering would enjoy a consumer's surplus of 90 units of utility, that is 210 minus 120.

Another way of bringing out the meaning of this consumer's surplus is to say that it represents the clear loss which would be sustained by the individual in question if he could have no apples. In such a case he would lose their total utility, 210 units, but against this he would have the utility got by

buying other things with the twelve pence, namely 120 units. The clear loss is 90 units.

Most psychologists (who are scientists devoted to the study of mental phenomena) would maintain that you cannot add the consumer's surplus of one person to the consumer's surplus of another person, because no relations subsist between the utilities enjoyed by different persons. There is no common denominator to connect my preference for golf, when the alternative is cricket, with the preference of somebody else for pictures as compared with statuary. Utility in economics, it is argued, should be regarded simply as an objective representation of the fact of choice and not as implying that a choice of mine can be brought into preferential relationship with a choice expressed by anybody else. We must not assume that choice is measurable in units of utility that are the same for all. This consideration affords sure foothold for the opinion commonly held that price, while it measures the marginal utilities of things to one individual, does not measure marginal utilities as between different individuals. But, in support of this opinion, considerations can also be adduced from the utilitarian point of view which, given that point of view, are unassailable. Even were there such

things as units of utility the same for me as for any other person, the marginal utility of a thing for which he and I paid the same price would not necessarily be the same for both of us since we might differ in respect of tastes and intensity of wants and he might be the wealthier. As a person gets wealthier, the marginal utility of money to him falls, other things being equal. The conclusion to which the argument of this paragraph meanders is that the surplus in utility enjoyed by a group of consumers of a commodity is an assemblage of diverse things which cannot be added to one another to make up a thinkable whole.

Consumer's surplus is more easily comprehensible when we think of it in terms of money. We may then define it as the difference between what a person does give for a thing and what he would give rather than be deprived of the thing altogether. If I would give £45 for a piano upon which I have set my heart, and am able to buy it for £20, I enjoy a consumer's surplus of £25 on my acquisition. The £25 stands for what I have saved in view of the fact that I was not compelled to give as much for the piano as I was prepared to give. Similarly we may interpret the surplus in the case of the apples already treated in terms of utility.

For the twelve apples a week I give 1s. a week, but rather than do without any apples I would give for the twelve 1s. 9d. My consumer's surplus reckoned in money is, therefore, ninepence on the apples. For convenience let us call this expression of the surplus in terms of money monetary consumer's surplus.

To make the notion with which we have been dealing of substantial practical value, we have to conceive of an aggregate monetary surplus, with reference to any commodity, which is made up of the surpluses of a number of different individuals. There is no difficulty in doing this, as it is perfectly possible to add together sums of money which belong to different people, though it is not possible to conceive of the addition of the things (preferences) to which these sums of money refer. After performing the operation of adding together consumer's surpluses in money, we must not, however, fall into the error of thinking that £1 worth of one person's consumer's surplus is the same thing as £1 worth of another person's consumer's surplus. But this reservation notwithstanding, the conception of a consumers' (in the plural, observe) monetary surplus is of value because it is not unreasonable to suppose that, other

things being equal, the destruction of a large monetary surplus connected with one commodity is likely to mean greater real loss than the destruction of a smaller surplus connected with another thing. In the "other things being equal" is impounded such a proviso as the following, that each of the two things is consumed in bulk by the same class or by different classes in about the same proportions.

This conclusion will instantly suggest some of the uses that can be made of the doctrine of consumers' surplus. In taxation, for a given gain on the part of the Government, one tax may wipe out more consumers' surplus than another tax. The one that wipes out least is, of course, to be preferred, other things being equal. Hence we may deduce that it is well, in the absence of strong reasons to the contrary, to avoid the taxation of things the demand for which is highly elastic, because, when demand is of this kind, a small tax will largely reduce the consumption and so the consumers' surplus. It is an equally legitimate inference that the taxation of things strongly subject to increasing returns (which will be explained in the next chapter) is to be avoided, because the taxation of such things raises price by substantially more than the amount of the tax,

inasmuch as the supply price (apart from the tax) of the smaller quantity is higher than that of the larger quantity. The price being thus doubly elevated, consumers' surplus is doubly sacrificed.

One minor difficulty arising out of the conception that a surplus as above explained is met with in consumption, may be at once stated and removed. It is derived from the fact that the initial demands for absolute necessities of life are indefinitely high. Anybody, for example, would be ready to give all that he had for a little water rather than die of thirst. In cases of this character, in reckoning consumers' surplus we must leave out initial demands; but only very few of the particular things that we purchase happen to be strictly essential to the maintenance of life

The reader will not, of course, allow himself to fancy that consumer's surplus exists anywhere as a separable sum of something which can be pointed to as the surplus and labelled as such. The bare idea is ridiculous; and did it in any sense correspond with fact consumer's surplus would have been discovered ages ago. It is on the contrary hidden in experience as the ether around us—if it exist—is hidden in everything. The consumer's

surplus got from a thing, regarded as a saving of a part of what would have been paid for the thing had the payment of its full value been unavoidable, is spent on other things and so becomes merged in real income, that is income not in money but in goods. And it is true, admittedly, that we must not thoughtlessly add up the surpluses got by an individual from different things and call the sum his total consumer's surplus. Take away one article from a person and his demand for certain other articles will be increased, while his demand for certain other articles will be decreased. Some articles are so closely related in demand that their utilities are commingled—and in some degree the utilities of all things are commingled. One thing helps to create the utility of another thing, as milk does that of tea; in which case they are said to be complements. Again one thing undermines the utility of another thing, as tea does that of coffee—without tea we should prize coffee more highly—in which case they are called substitutes. Nevertheless where it is possible to make due allowance for the actions and reactions of things on one another's value and get at the aggregate consumer's surplus with reference to some individual there would be a

meaning in the conception. What is it? What is the sense, it has been asked, of saying that an income of £100 a year is worth £1,000?—for that is in effect what we should say. Dr. Marshall's answer is to my mind complete and convincing:—

“Of what avail is it to say that the utility of an income of (say) £100 a year is worth (say) £1,000 a year? There would be no avail in saying that. But there might be use, when comparing life in Central Africa with life in England, in saying that, though the things which money will buy in Central Africa may on the average be as cheap there as here, yet there are so many things which cannot be bought there at all, that a person with a thousand a year there is not so well off as a person with three or four hundred a year here. If a man pays a penny toll on a bridge, which saves him an additional drive that would cost a shilling, we do not say that the penny is worth a shilling, but that the penny together with the advantage offered him by the bridge (the part it plays in his conjuncture) is worth a shilling on that day. Were the bridge swept away on a day on which he needed it, he would be in at least as bad a position as if he had been deprived of elevenpence.”

The reader can judge for himself whether the alleged fecundity of the marginal method is borne out by its application to demand. We have strictly observed the limitations which render analysis of social facts so difficult. We have taken the experiences of a person in respect of his wanting or demanding as an indivisible whole, as we are told that we must by the most competent psychologists. And we have made no suspicious assumptions about the basis of these experiences; for indeed we have made no assumptions at all as regards their basis, but have on the contrary accepted as our data the bare facts of wanting and demanding as they are directly revealed. But the door has not thereupon been shut against our scientific aspirations. By the marginal method, the simple device in this case of watching the differences made to the totality of a person's experience—by differentiating experience, as it is expressed in the first chapter—we have reached, under the guidance of Dr. Marshall in particular, generalisations, which are adequately explanatory of demand for economic purposes and illuminating (particularly the doctrine of consumer's surplus) from the point of view of a philosophy of life, and which, as will transpire later, in conjunction with other generalisations having

equally a one-sided aspect, enable the social scientist to lay bare the ramified system of law inherent in the economical functioning of communities.

At this point, despite the chance of confusion, a new idea must be attached to the results of our analysis of demand by the marginal method. The term "marginal" is constantly employed with a meaning different from, though related to, that ascribed to it above. It is applied not merely to the final increment of a class of things but also to any particular thing in the class which is only just good enough to be used. When the second meaning is intended, it would save misapprehension if the expression "marginal quality" were used. Let me illustrate the distinction. If I pick twenty roses the twentieth is the marginal rose, and the addition made by the twentieth to the satisfaction derived by me from the roses is called the marginal utility of twenty roses to me at the time. Now the twenty roses are not equally perfect. The least perfect of the twenty, the one on the margin of being rejected, is also loosely designated the marginal rose, or, as we had better say, the rose of marginal quality. Similarly, of one hundred workmen employed on a job, any individual who is only just

good enough to get employment is called the marginal workman or the workman of marginal quality. Also the employer in an industry whose capacity only just attains the level which enables him to make a living in the industry is the employer of marginal quality. It is exceedingly important that the distinction between these two uses of marginal should be firmly grasped.

We are now adequately equipped to define wealth and value. Broadly understood all that people want is wealth. But sometimes the conception is narrowed to exclude things that are accessible to all and unlimited in quantity such as air; and sometimes in addition the qualification is introduced that desirable things to be wealth must have been produced by labour. Value may mean value in use or value in exchange. By the former is meant the utility, as above defined, of things that are wanted; and by the latter is meant the quantity of other things that the thing in question will exchange for. The value in exchange of an article or service is evidently dependent upon its marginal utility to would-be purchasers and the marginal utilities of the things offered for it. When what is offered is money, value in exchange is

called demand price. It is important that ethical ideas should not be read into the conceptions of wealth and value when they are being employed in their everyday sense. If our aim is to indicate what people ought to want instead of what they do want, we had better speak of ethical wealth and ethical value.

The introduction of the notion of wealth conceived from the ethical point of view raises issues which, though they are not primarily economic, if they are economic at all, need not, I think, be shirked, particularly as their examination will serve to clarify ideas vaguely hinted at in Chapter I. In opposition to the popular economics of his day, Ruskin wrote as follows:—"There is no wealth but Life—Life, including all its powers of love, of joy, and of admiration"; and again, "To be valuable is to avail towards life"; and again, "Wealth is the possession of the valuable by the valiant"—and in the highest sense he was right. All that we call wealth is only of value because it conduces to the great ultimate value which means conscious living properly conceived—"valiant" living. The former is economic value and is relative to the end which it subserves; the latter we may call absolute value. Now the curious thing is that absolute

value is not conceivable as a quantity, or at most is barely conceivable as a quantity, whereas economic values are conceivable as quantities and are moreover measurable.¹ It is true that the thorough-going Utilitarians thought of absolute value as a quantity—as a simple sum of economic values viewed as atoms of pleasure, or whatever else they liked to call the feeling elements which in their philosophy they treated arithmetically—but once the atomistic view of experience is departed from, and economic value becomes merely the expression of preferential relations, absolute value is shifted on to a plane of its own where measurement may be impossible. For what after all are the economic values? It has been laid down above that they represent no more than preferences. Now these preferences have their origin in our implicit notions of absolute value and mean no more than relative degrees of imagined conduciveness to this absolute value. And evidently the thing to which economic goods conduce cannot be measured against the means by which it is brought about, if these

¹ My colleague, Professor Unwin, suggested to me the significance of this point, particularly in relation to the seeming conflict between economic and idealistic points of view.

means are not measurable absolutely but only in relation to one another. Here, it may be pointed out, is to be found an explanation of the indeterminate value of initial increments of indispensable goods. Whenever a means to the end which gives the impulses measured in demand—the end consisting, as has been said, in harmonious living according to some standard—whenever such a means is absolutely indispensable, it ceases to have the property of relative conduciveness and its measurement becomes impossible. These points are worth a fugitive notice for the sake of the student with a philosophical bent, but it must be understood that, inasmuch as the economist *qua* economist need not go behind preferences, no dogmatic pronouncements on philosophical issues are here intended.

CHAPTER III

SUPPLY AND ITS RELATION TO DEMAND

It has become a commonplace to say that the price of things is settled by demand and supply. The statement, though true, gives little information so long as the meanings of demand and supply remain unexplained. Demand has already been dissected. We have discerned that it expresses the relation between prices and quantities bought, declaring that so much will be bought at one price and so much at another price, and that it is derived from the marginal utilities of things to consumers. We have now to interpret supply. It too expresses a relation and declares that at one price one quantity will be produced and at another price another quantity. This statement must be expanded.

Let us think of an industry as constituted of half a dozen businesses or firms. Each of these producing units has its own cost of production (meaning cost of production per unit of output), and it is exceedingly unlikely that

the cost of production of one firm will be identical with that of another, because all employers do not possess the same ability and application, workmen are not indistinguishable from one another in respect of capacity, and there are differences as regards productive value between the several units of other agents in production. The business which has the misfortune to function with the highest cost of production is known, as we have seen, as the marginal business, or business of marginal quality.

With a view to trimming the ragged edges of our ideas, let us take a particular case. Let us imagine an industry engaged in the manufacture of some kind of braid. Let there be four firms, A, B, C, D, and let their costs of production per yard of braid be 6d., 7d., $6\frac{1}{2}$ d., and $6\frac{3}{4}$ d. respectively. Then B is called the marginal firm because it has the highest cost of production, namely, 7d. Let us imagine that the output of the four firms taken together is 100,000 yards of braid per year. Then, if 100,000 yards are to be sold, the price must be at least 7d., because, if it were not, it would not pay the firm B to produce. In its cost of production of 7d. we have included adequate remuneration for all the factors in production, including the employer.

Were it to receive continuously less than 7d. a yard for its output the pay of some at least of its agents would have to be reduced to an inadequate level, and they would consequently be disposed to seek some other occupation, and even if they did not the gaps in their ranks created by time would wait in vain to be filled up. Hence, we may conclude at once that the supply price for a given output must tend in the long run to equal at least the highest of the costs involved in the attainment of that output. And it cannot for long be more. Were the demand price for 100,000 yards of braid per year more than 7d., and were the price, under the influence of the competition of the buyers, forced up to the demand price, as it would be, productive agents would be attracted to the industry because in such circumstances producers and capital in the industry would be receiving more than normal remuneration. So we may suppose that another firm would be added to the four already in existence. Premise that the cost of production of the fifth firm is $7\frac{1}{4}$ d. If this were the highest cost under the new conditions, the new firm, which we shall call E, would be the marginal firm under the new conditions and the supply price would reach $7\frac{1}{4}$ d. for an output of five firms. Let us take

it for the sake of argument that the output of the five firms is 120,000 yards. Then the supply price for an output of 120,000 yards would be $7\frac{1}{4}d$. Continuing this line of reasoning we could construct, in theory at any rate, a schedule of supply prices for all possible outputs. The highest cost of production (as above defined) for a given output is loosely called the marginal cost of production. With a view to avoiding an ambiguity that will appear later, it is better to call it the cost of production (per unit of output) of the marginal firm when there is any chance of a misunderstanding of the shorter expression.

So far our course has been plain sailing, but we now reach troubled waters. We have assumed above that the new firm E will have a cost of production higher than that reached by any of the firms, A, B, C, and D, under the old conditions. But this would not necessarily be the case. The new firm might conceivably have a cost of production lower than the old marginal cost, and yet the highest of all the costs under the new conditions. After the new firm had appeared and the industry had been made larger, greater specialism—of labour, machinery and businesses—would be likely to pervade the industry event-

ually, and all specialism means economy in production. Moreover the augmented industry would offer a larger market to the subsidiary industries, which are the industries engaged in meeting its wants for appliances and accessories, and they would, therefore, be able to supply it with its requirements more cheaply. Moreover it is possible that transportation in connection with the industry would so develop that the cost of carriage in relation to the industry would be reduced. Enough has been said to suggest the possibility, which will frequently be found borne out by fact, that with the expansion of an industry marginal cost might fall.

But just as a new firm may have beneficial effects upon existing firms and depress their expenses, so it may have deleterious effects upon them and force up their expenses. Consider the case of farming in a densely packed country. An increased demand for farm products, meaning an increase of the farming classes and of the capital devoted to farming, would compel cultivators to work the old land more intensively and bring new land, inferior to the worst of the old, under the plough. So costs would rise. Of course these tendencies to an enhanced supply price might be counteracted

to some extent by the greater scope afforded for specialism.

We are here in touch with the conceptions of increasing and decreasing returns. When the enlargement of an industry is accompanied by a rise in marginal cost it is usual to say that the industry is subject to decreasing returns. But when the enlargement of an industry is accompanied by a fall in marginal cost, it is usual to say that it is subject to increasing returns. When marginal costs remain the same it is said that the industry is subject to constant returns. Why these phrases "increasing returns," "decreasing returns," and "constant returns" are employed in the cases imagined will be readily grasped. If the cost of production of the new marginal firm is beneath that of the old marginal firm, the output per unit of cost of the former firm must be greater than the output per unit of cost of the latter. The outputs or returns of the industry at the margin will, therefore, have increased with an extension of the industry. Hence the use of the term "increasing returns," and the equal appropriateness of the terms "decreasing returns" and "constant returns" in the cases to which they apply.

The conceptions of increasing, decreasing,

and constant returns must not be confounded with the so-called laws of increasing, decreasing, and constant returns. Let us confine our attention for the moment to increasing returns and remember that all that is affirmed about it applies *mutatis mutandis* to decreasing and constant returns. The conception of increasing returns has been explained. Now the law of increasing returns is best interpreted, in my opinion, as defining the conditions under which increasing returns with reference to industries are met with. There is not yet among economists complete agreement upon this matter; but in a brief introduction to economic theory I must be content to put forward my own views, which are those of others also, as regards the most appropriate interpretation, while warning the reader that they are not universally accepted. I should take it, then, that the law of increasing returns defines the conditions under which increasing returns are met with in industries. These conditions can be easily formulated, but we may formulate them at different levels of abstraction; and it goes without saying that the more complete the abstraction the more universal will the law be. It will probably be a convenience to recognise two laws, namely, the abstract law and the realistic law. I shall

first enunciate the abstract law and the corresponding abstract law of decreasing returns and briefly justify them, and afterwards proceed to enunciate and explain the realistic uniformities.

Abstractly the law of increasing returns affirms that when an industry enlarges there must be increasing returns (that is to say, the marginal cost of production must fall), provided—and this is a significant point—that there is no dearth of agents in production at least equal in quality to those engaged at the old margin. The truth of this generalisation will be immediately apparent. When the industry enlarges all parts of its working will tend to become more specialised, and specialism will tend more thoroughly to interpenetrate the industries subsidiary to it. Specialising is economical, so, if nothing happens to counteract its effects, the marginal cost of production must fall. Now the only thing which could counteract its effects would be a limitation of suitable agents in production at least equal in economic value to those at the old margin; and the possibility of this has been rejected. Hence the inevitable tendency to increasing returns in the circumstances described. But we must not, of course, jump to the conclusion that, when-

ever there is a limitation of agents in production of a high quality, increasing returns is impossible. Were the limitation not serious, or were the gains from the new specialism considerable, it might still be that costs in the new marginal firm would be beneath those in the old marginal firm.

The abstract law of decreasing returns is the correlative of the abstract law of increasing returns. It declares that when the supply of some agent in production is narrowly restricted, and an industry absolutely depending upon it enlarges nevertheless, decreasing returns must eventually supervene. On any practical example being taken, it will be perceived that it must be so. Suppose that the population on an island of 100 square miles has to feed itself from the produce of its own land. Sooner or later, were the population to grow steadily, there would be such a relatively inadequate area from which to obtain the food of the people that every addition to population would result in additions to the produce which constantly became less in amount, and the cost of food would rise. For a time the tendency to decreasing returns might be counteracted by the advantages of specialism, but the counteraction at some time would cease and the tendency

to decreasing returns would pass into actuality

The realistic laws of increasing and decreasing returns are derived from observation of actual economic conditions; in short, they are inductively established; but at the same time, as in the case of other inductive generalisations, for their complete explanation deduction must be enlisted. The realistic law of increasing returns declares that an enlargement of a manufacture is usually accompanied by increasing returns. The law holds generally because manufacture is seldom confronted with a dearth of any essential agents which play a part in settling the cost of production. The new labour, the new machines, the new employers are not likely to prove inferior in any marked degree to those already incorporated in the industry. Material may be an exception, but in most manufacturing the cost of material forms a small part of the cost of production. It is not probable, therefore, that in manufacture the economies of specialism associated with expansion will meet with any serious counteracting influences. The realistic law of decreasing returns proclaims that efforts to obtain larger supplies of natural products are usually accompanied by decreasing returns. Obviously, in the deter-

mination of the results of such efforts, nature plays a predominant part, and the best and most conveniently situated natural resources are strictly limited in quantity.

It is hardly needful to say that the realistic laws of returns and the abstract laws of returns supplement one another. They both relate to the same facts, broadly speaking; but while the realistic laws have a more practical value in adding directly to our information about economic affairs, as the latter immediately present themselves to us, it is the abstract laws which have the greater speculative value in satisfying our minds as to the causes of things. One defect of the realistic laws is that they cannot be universally affirmed. We have to introduce such qualifying phrases as "usually" or "generally." The abstract laws attain absolute universality, but only at the sacrifice of immediate applicability.

All this is a digression, though a necessary digression. We may now pick up the main thread of our argument, and at once hasten to unite it with our earlier exposition of demand. The supplies of reproducible things we have seen depending upon ruling prices. When constant returns is found there is one supply

price only at which as much, or as little, as is wanted will be produced. But when decreasing returns rules for the larger output a higher price must be paid, and when increasing returns rules the larger output brings such economies that the supply price falls. Supply prices in conjunction with demand prices settle the market prices of reproducible things. And they also settle the prices of non-reproducible things, but in this latter case "supply prices" have no reference to cost of production. They must be taken to mean merely the prices at which owners will part with different quantities of the non-reproducible things in question in their possession. Let us put the relations between demand prices and supply prices in a table relating to some industry or other.

Output in tons.			Demand price.		Supply price.
1,000	..	..	17/6	..	16/2
1,100	..	..	17/-	..	16/3
1,200	..	..	16/8	..	16/5
1,300	..	..	16/6	..	16/6
1,400	..	..	16/4	..	16/7
1,500	..	..	16/-	..	16/9

In this case, to which decreasing returns has been supposed to apply, price would be 16s. 6d.,

and the amount sold would be 1,300 tons. Were the output to increase to 1,400 tons the supply price of the marginal firm would be 3d. a ton above the market price, and, as this would mean that productive agents, or some of them at any rate, were working for inadequate remuneration, the output would contract. But, were the output 1,200 only, and the market price 16s. 8d. in consequence, all producers would be doing exceptionally well, and others, together with capital, would be attracted into the industry so that the output would expand. By "output," of course is intended output in some unit of time, say a year.

Generalising we may say that the price of a commodity will be the price at which equal quantities are demanded and supplied, provided that a slight addition to the supply would mean a supply price above the demand price, and a slight reduction of the supply would mean a supply price below the demand price. There may be, but there is not likely to be, more than one such price. It is only possible when increasing returns rules, and, if it does, is least likely when demand is highly inelastic.

A difficulty may have suggested itself to the reader. It would appear to follow from the

foregoing that the way to get larger supplies when increasing returns rules is to offer lower prices—which seems absurd and is absurd. Larger outputs are always induced by higher and never by lower prices. The explanation of the seeming absurdity is this, that when price has risen, and a larger output is got, price will begin to subside until a level lower than the old is reached. Our generalisations relate, not to immediate consequences, nor to such as appear soon, but to the consequences which, other things being equal, must be brought about in the long period. The exact scientific implications of the long period have been laid bare in our first chapter.

This will be the most suitable break in our exposition to introduce a qualifying idea, relating to all the foregoing and much that follows, an idea which has hitherto been reserved in order to avoid, in the first instance, a certain complication in the theory of price. The idea, which needs only to be stated to be admitted, is that cost of selling, as well as cost of producing proper, governs price. When therefore I speak of cost of production, in relation to the settlement of supply prices, I must be taken to include in production all those processes, whether industrial or commercial, which are antecedent to the receipt

of the thing produced by the person whose consequent disbursement makes the price that we are studying.

The theory of which the presentment is now finished, concerning the determination of the prices of things, is unquestionably sound in substance and moreover sufficient as a rough working engine. But it will not do, in the form in which it has been presented, as a final account of the matter. It is incomplete. It ascribes the settlement of the price of a reproducible thing to tendencies for demand price on the one hand, and the average cost of production (meaning cost of production per unit of output) of the marginal firm on the other hand, to attain equivalence: but it leaves unexplained the position of the margin so conceived and the determination of the output of the marginal firm which helps to settle its average cost of production. Why, for example, in the case of the braid industry, taken at the beginning of this chapter, should there be four firms producing braid? Why not three firms, each firm producing more, so that the marginal firm would be the third in efficiency instead of the fourth? In this event, there being greater efficiency in the marginal firm presumably, would not mar-

ginal cost be lower? In the theory, as we have put it, no answer is found to these questions; demonstrably, then, the theory is leaky. To answer these questions must be our next task if our aim is completeness of theory.

Our primary objective must be to bring to light the influences governing the sizes of businesses or firms. We shall take for study a firm which is not cramped for want of capital and which can obtain all the orders that it is capable of carrying out at a sufficiently low cost. Let us try to imagine how the employer at the head of such a firm would be determined in laying down the limits of his business. Though many firms are not organised on a private basis, but have been constructed as companies, or transformed into companies, or organised in the co-operative form, I speak of the "employer" at the head of the business, because the more complicated types of business organisation introduce no new elements which affect the character of the problem with which we are concerned, and it is a convenience to speak as if every business functioned under the direction or control of a single employer.

The first thing to which attention must be summoned is the way in which the employer's

expenses, apart from his own remuneration, would vary with the variation in the extent of his firm's operations. The firm, suppose, produces boots of one sort. If it turned out very few pairs a year the expenses of production would certainly be high, because for a tiny output very little machinery could be used and very little division of labour could be introduced. Successive enlargements of output by equal increments would, therefore, entail additions to the total expenses of production which for a time would become continuously less and less. These additions to the total expenses of a business (involved in its expansion) may be called the marginal expenses of a business; which are to be distinguished from marginal expenses, so-called, meaning the expenses per unit of output of the marginal firm.

Let us have figures to prevent any misapprehension. Say 1000 pairs of boots a year are manufactured and that the aggregate expenses, including interest on capital, wages, cost of material, and everything with the exception of the employer's earnings for himself, amount to £1000. Let the size of the business increase so that the output becomes 1001 pairs of boots, and let the addition to the total expense be 15s. This may be called

the marginal expense in the business, for it is the addition made to the total expense in the business when the output is increased by one pair of boots. Let the output of the business continue to increase by increments of one pair of boots each; then there would be corresponding additions to total cost (called marginal costs or expenses as we have seen) say, 14s. 11d., 14s. 10d., 14s. 8d., 14s. 9d., and so on successively.

If we watched such a gradual growth of a business or firm from an insignificant size it would be found that marginal costs would fall at first, for reasons already advanced. Now, can this fall in marginal expense go on indefinitely? The obvious and correct answer is that it cannot ordinarily. If it did, the chances are that by this time each industry would have become the monopoly of a single firm, which owed its position to the fact that, having once got a start, it was enabled to undersell its competitors until there were no competitors left to undersell. The fall in marginal cost cannot ordinarily continue without end, because the scope for further specialism and use of machinery afforded by further extensions of the business would tend to be neglected by the over-taxed brain of the ultimate head; and any economy

got out of them, nevertheless, would almost certainly be counteracted by losses in other directions, due to the fact that the firm became too large to be effectively directed and properly controlled by the one employer, or the one Board of Directors. Delegation of authority, implying the creation of departmental responsibility, might for a time prevent any serious rise in the cost of production with increased growth; but a limit is to be expected, though a wider examination of human nature and of the industrial system than can be attempted here would be required fully to justify this conclusion. We may take it, then, that there comes a time when marginal costs begin to rise, because there comes a time when the business attains dimensions too vast for the strength of its central organs.

The question to put to ourselves at this particular stage of our discussion may be phrased thus: At what point is it decided to attempt no further extensions? The notion of marginal expense having been brought in, this question is not a puzzling one. We may take it for granted that a small extension of a firm's output does not add appreciably to the employer's work. Consequently it pays the employer to allow his business to grow until his marginal

outgoings equal price; but it does not pay him to allow it to assume greater proportions after this limit has been reached. We may, then, lay it down as an economic law that in every industry, be it agricultural, manufacturing, distributing or what not, the marginal expenses of each economic unit known as a business, or firm, would tend to equal the price of the commodity or service supplied. We need not trouble to enter here into the side complications which would have to be introduced into this exposition to meet the case of businesses producing things of several sorts, particularly as they raise no fresh theoretic issues of outstanding significance.

Let us go back for illustration to our boot-making industry and imagine that it comprises half a dozen firms. Let us suppose that it turns out in the aggregate 12,000 pairs of boots a year, for which output the demand price and the cost of production of the marginal firm are both 14s. Then if the industry is in a position of perfect equilibrium, which implies that every one of its constituent parts is in a position of perfect equilibrium, each business must be of such a size that its marginal expenses are 14s., and its total expenses are less than its marginal

expenses multiplied by its output. The last part of this proposition must hold because the employer's remuneration, apart from payment for his capital, is represented by the excess of his aggregate receipts over his aggregate outgoings. At a position of perfect equilibrium, it may be remarked incidentally, this difference, in the case of the marginal firm, must be an amount just sufficient to have induced the employer of marginal capacity to embark on production in the industry. If it were more, more employers would be attracted; if it were less there would eventually be fewer employers. Super-marginal employers, owing to their greater ability, may be getting more than they would have worked for, but they will not produce more than they do because it would not pay them, whatever they are earning, to manufacture an extra pair of boots for sale at 14s. when the addition to their aggregate costs would exceed 14s.

In order that no link may be missing in the chain of reasoning, the above exposition may be supplemented by a brief survey of the changes which occur when demand rises. Demand having risen, more than 14s. a pair would be paid for boots, were only 12,000 pairs obtainable, and our six firms would be induced to extend their operations if it were

feasible to do so, because after the supposed change in demand it would be profitable for them to do so. But at the same time the rise in price would render it possible for the would-be employer just excluded previously to make sufficient in the industry to induce him to venture his capital in it. So a new position of equilibrium would ultimately be attained with seven firms instead of six, all having a marginal cost higher than the old marginal cost, in the absence of effective tendencies to increasing returns; and there would be a new marginal firm with a surplus left over for its employer which was just about adequate from his point of view to make it worth his while to manufacture. The new output, we may imagine, would be 15,000 pairs of boots, and the price, say 14s. 3d., would tend to be the marginal expense in every one of the seven firms.

One possibility reviving a consideration advanced earlier in the present chapter must be allowed for, and this exposition is complete. Marginal business costs have been represented as rising with a growth of the industry. Such a representation is entirely right as regards what would immediately happen. But, as we have already learnt, the appearance of a new firm might ultimately

render the functioning of the industry as a whole not merely more economical but more economical to such an extent that the new marginal cost of a business would be beneath its old marginal cost. To admit this qualification is simply to admit that industries may be subject to increasing returns.

The significance of the theory of supply as thus refined may have already dawned upon the reader. It involves us, as it now stands, in the conclusion that by the supply price of a given output of an industry we ought logically to mean in highly abstract theory the marginal expense entailed in the several businesses of the industry when such an output is aimed at. Of course this marginal expense comes to the same thing as the cost of the marginal firm per unit of output under the assumed conditions. This follows as a corollary from the above reasoning. Our new view results from a thorough and unre-served application of the marginal method to supply. My marginal demand and the marginal demand of every other purchaser equally settle price on the side of demand, according to finished theory. We have drawn from industrial experience by close analysis that a corresponding assertion can be made as regards supply; that, according to strict

theory, in an exaggerated long run it is the marginal cost of every producer, as it is the marginal demand of every consumer, which settles price.

But there is a difficulty in our new view. Does abstract theory hold with such precision of the facts on the side of supply as of the facts on the side of demand? The latter may be co-ordinated in systems as non-viscous as water but the former in systems as viscous as tepid tar. Before he has made any tests an employer cannot accurately guess at what is the most economical size of business for him to aim at, and once businesses are established their elasticity may be checked by cramped space in their premises and in the vicinity and the limited horsepower of the engines originally installed. Again, though it may be worth while to attempt a large expansion, the trouble of making a little expansion may quite outweigh the gains. Moreover it is indubitable that a certain size of business is likely to become typical of certain industries despite the differences between employers in respect of capacity. Consequently we cannot allege that the tendency for the marginal cost of a firm to equal price will be as a rule triumphant. In numerous instances it may be indefinitely

counteracted. For practical purposes, therefore, it is probably safer to say that supply prices are settled by the cost per unit of output of marginal firms; remembering, however, that some theory of the sizes of businesses must be brought in to supplement this statement. Cost per unit of output in the marginal firm is, of course, less likely than the marginal cost of any business to diverge widely from the results which theory would lead us to expect in a frictionless economic system.

We must be on our guard against making our working theories niggling and going to the extreme, so to speak, of using a razor to cut turf. Nevertheless it is worth while taking notice of a tendency even if it is overborne before it attains its end. Its recognition may enable us to account for otherwise puzzling swells on the surface of economic fact; and more important still, perhaps, its recognition may enable us to detect a single law in seemingly disparate causal relationships, a law which is none the less real because in part it is invariably counteracted. These considerations apply to the tendency which we have been discussing. It is fully worth while knowing that a tendency exists which when effective renders it possible to explain value

on the side of supply by differentiating the experiences of businesses—their experiences as a whole—to use the phrase previously employed, just as it is possible to explain value on the side of demand by differentiating the experiences of consumers.

The necessity of taking experience as a whole in our theorising may be emphasised again, now that we deal with it on the side of supply. Neither demand nor supply can be atomistically conceived. I do not know the utility of sugar when it is in my cup of coffee, but I do know the difference that it makes to the utility of the cup of coffee; as a producer of steel I could not separate the cost of a particular ton of steel from the costs of other tons of steel made by me (because many tons of steel are made at a time by groups of productive factors working as a whole), but it would be theoretically feasible to calculate what difference its production made to my total costs. However, it happens, as we have seen, that the cost per unit of output in a business comes on to the stage among the supply forces, and that, in relation to the marginal business, when supplemented in the manner already indicated, it serves the purpose (the settlement of supply prices) which would be served in a

delicately adjusted economic system by the marginal cost of any normal business which was in a position of perfect equilibrium. In Chapter VII we shall meet again with the differentiation of business experience in the matter of business organisation and of the action of the law of equi-marginal returns in settling it; and, since the analogies between the laws of demand and supply have been touched upon, it may further be remarked here that we shall find in Chapter IX that the marginal method discloses on the supply side of value a surplus analogous to that on the demand side known as consumer's surplus.

To conclude this chapter a few remarks may be made as regards the agents in production. Production consists in making utilities out of the material and forces at our disposal—utilities being defined as laid down in the previous chapter. The agents are commonly classified as land, labour, capital and organising. Land means not only land but all the forces of nature (apart from human nature) which are an aid to man's productive activities, including animal life and winds and rivers and seas. Organising and labour are of the same general class, and to a large extent they interpenetrate one another, but for purposes

of analysis the distinction between them has a certain value. Capital is not an original agent in production. It is the product of land, labour, organising and saving. Immense discussion has taken place over the question of what it is most appropriate to regard as capital. For our requirements it is sufficient to think of it as wealth which is not consumed to afford immediate gratification but is on the contrary applied to further production. Its value in the form of ships, factories, engines and machinery will not be questioned.

The efficiency of labour is of fundamental importance, not merely with a view to the creation of wealth, but also with regard to intangible social well-being. The efficiency of labour is governed by natural and social conditions, the duration of work, wages, and labour's prospects. A bracing climate makes a lusty and active population. Work which is monotonous, or excessively exhausting, is bound to cause all-round deterioration of a people's vital forces. Dreariness in one's environment breeds general listlessness, and a foul atmosphere and other insanitary conditions undermine strength and generate disease. Wages and their spending have obviously a direct bearing upon efficiency and so also has the outlook of people. Divested of all chances

of improving his position, the ambitious operative is not likely to work with much enthusiasm.

When all this has been said, however, every aspect of the problem of the efficiency of labour has not been presented. A community is only rendered most efficient, in the broadest sense of the term, when the most valuable productive potentiality of each person has been rendered actual. To bring out the highest powers of the individual and place him at work suited to his capacity implies an educational system which is successful both in disclosing and training ability and a social system wherein an individual, whatever the grade of his birth, finds no difficulty in making his way into the economic ranks for functioning in which he is well endowed naturally and properly prepared. Given these conditions and a sufficiency of initiative and perseverance in the individual, the vertical mobility of labour (by which is meant the recruiting of one economic class from another) is said to be high.

The end of production, we must bear in mind, is not to secure the greatest volume of goods, but, other things being equal, the greatest volume when they consist in the articles and services most in demand. Exactly

speaking, society is rendered more productive when its productive activities are made more responsive to the needs of the community. Such responsiveness can only be secured when the population, either directly or through the disposal of the rising generation, is mobile geographically and as between trades. Finally let us not forget, particularly when studying economics, that too great a sacrifice of real but intangible goods may easily be made to get greater tangible possessions.

CHAPTER IV

MONOPOLY

THE theory of value under conditions of monopoly is naturally a good deal different from the theory of value under conditions of competition, but it is not different in the sense that, with a view to its construction, a complete re-analysis of economic facts must be made. All the generalisations concerning value which have been laid down so far apply to monopoly excepting only those which imply the existence of rivalry among suppliers of the same thing. When competition is absent, as when it is present, price is determined by demand and supply, only in the two cases demand and supply play different parts. In the latter case, competition being a driving force, price is settled, so to speak, automatically. In the former case, however, the constraint imposed by competitive forces upon the will of the supplier having been abstracted, demand and supply only enter into the settlement of price in the sense that they are the

data upon a consideration of which the monopolist forms his decision. The monopolist is in the fortunate position (fortunate from his own point of view) of being able to decide what the market supply shall be. When he has so decided, price gets fixed by the mechanics of the market set in action by demand. Of course an employer who is competing with others is just as much at liberty as a monopolist to decide upon producing a limited quantity only of the article that he furnishes to the market, but, as his works are not the sole source of the supply, his decision does not affect the total market supply in the long run. Other employers would eventually fill up any gap created by his restriction of his output if it were normally profitable to do so.

We shall proceed at first on the assumption that the monopoly that we are studying is a rigid one, or in other words that the control over the supply is complete; and for the sake of brevity of statement I shall write as if a monopoly were always in the hands of a single individual, though, as a matter of fact, a monopoly may be a company managed by directors or a group of combined employers.

Now the object of the monopolist, other things being equal, will be to maximise his net takings, that is the difference between

his receipts and his expenses when we include in the latter a remuneration just sufficient to induce him to do the amount of work that he does. This difference between his expenses, thus widely regarded, and his gross receipts may be called monopoly revenue. His object is to maximise monopoly revenue, and this is maximised when the product of the amount sold and the difference between the price and the monopolist's average costs is the greatest possible. The theory may be illustrated with the aid of the following table :—

Output in tons.	Demand price per ton.	Aggregate receipts.	Aggregate costs.	Monopoly Revenue.
90	£50	£4,500	£4,000	£500
100	£49	£4,900	£4,350	£550
110	£48	£5,280	£4,700	£580
120	£46	£5,520	£5,000	£520

In the case represented in the table the output would be 110 tons, at which output monopoly revenue is maximised.

It looks as if the subject of monopoly were drawing us away from the high ground of pure theory where the effect of trifling variations—of differentiating experience—explains everything. It is true that the consequences of such variations in demand prices and supply prices furnish the monopolist with

the data from which he calculates at what output maximum gains can be reaped; but, according to the exposition above, the comparisons which determine his action are comparisons of aggregates—of total gains at different outputs—not of margins, or, in other words, of the differences made to gains by small variations of output. This, however, is not an altogether correct account of the matter. The monopolist aims at an aggregate, a maximised revenue, but in order to attain it he can be guided, and is not unlikely to be guided, by the marginal effects of variations of his output on his net gains. He need not make his supply leap about bewilderingly in the hope of fortuitously hitting upon the one most favourable to his interests. On the contrary, if he is wise, he will decide on some output which seems to offer reasonable prospects of yielding a high monopoly revenue and then proceed scientifically by making small variations in it and watching their effect on his profits. When an effect is favourable he will naturally make another variation in the same direction and so on, but when it is otherwise he will retrace his steps. When monopoly revenue is the greatest possible, marginal costs equal what might be termed differential

receipts, provided that an addition to the output at this point would cause marginal costs to exceed differential receipts, and a reduction of the output would cause differential receipts to exceed marginal costs. By marginal costs is to be understood the addition made to aggregate costs by the production of the last increment; and by differential receipts is to be understood the addition made to the aggregate gross receipts by the sale of the last increment. We must not call the latter "marginal receipts," because that term might mean the marginal demand price. It is necessary to remark that there may be outputs other than that yielding the greatest monopoly revenue of which the above statement holds. Any position of which it holds may be called a position of monopoly equilibrium. When there is more than one position of monopoly equilibrium, so defined, the monopolist naturally selects that one which yields him the highest monopoly revenue, provided that he knows of its existence.

Thus far we have taken for granted that the commodity can be sold for one price only, but as we shall see later there are circumstances in which it is feasible to impose differential or discriminative charges. How-

ever, before taking up the consideration of the problem of monopoly in these circumstances something must be added to the theory under the simpler conditions already explained.

The question naturally arises as to what will be the effect upon price and supply of the monopolisation of an industry which used to be carried on competitively. The answer is that price is certain to rise and supply to be reduced if the integration of the industry does not bring about any economies in production. To suppose otherwise ~~is~~ to suppose that for no output can the average expenses be less than price, broadly speaking. It may be, however, that concentrating the control of an industry to the extent which renders it a monopoly will have substantial effects in reducing, for a time at any rate, the average costs of production. In this event it is conceivable that the monopoly price would be less than the competitive price; but there is a good deal to be said for the view that any saving immediately effected in cost of production might finally be counteracted, or more than counteracted, in consequence of the fact that efficiency might be undermined when monopoly suppressed the process of natural selection (which operates through the agency of the survival of the fittest

under competition) and relieved the pressure which competition exerts upon individuals, compelling them to be alert and act with energy. Whether competition may not also have its bad side in driving the bare survivors to resort in desperation to sharp or positively dishonest practices, such as lying advertising and thievish adulterating, it is not for us to inquire at present.

It is possible to lay down certain probable generalisations which enable one roughly to forecast what the effect of monopoly will be in different circumstances. When demand is highly elastic, a large restriction of supply under monopoly is less likely than it is when demand is inelastic, because a substantial curtailment of supply is needed to lever up price appreciably when demand is very elastic. When a slight limitation of supply sensibly raises price, it is practically certain that a shrinkage of output and a considerable percentage elevation in price would follow the creation of a monopoly, other things being equal. The phrase, "other things being equal" is inserted here because it may be essential to the success of a monopoly to conciliate the public, which is not likely to prove amiable if extortionate charges are imposed upon it. Another generalisation

is that material curtailment of output is less to be apprehended in industries functioning under increasing returns than in those functioning under decreasing returns, because in the former the smaller supply while it resulted in higher price would result also in the loss of the economies previously reaped from producing on a large scale. Yet another generalisation may be laid down, namely, that if monopolisation is to bring about a lower price it is most likely to do so (1) in industries in which much of the supply price under competition is made up of the expenses of securing as customers for particular firms persons who, in any event, would buy the commodity, and (2) in industries in which monopolisation lowers the cost of producing proper.

We pass next to the cases in which discriminative prices, or differential prices, as they are sometimes called, are possible. It may be said at once that discriminative charges cannot be imposed where competition is untrammelled, because the existence of these charges implies at least some agreement among producers. Differential charges are of three kinds, namely, personal, trade, and local.

Local discrimination is practised when a thing is sold for one price in one locality, and another price in another locality. International discriminations are common, and even intra-national discriminations are to be found. In the case of the latter the difference between the two prices cannot be more than the cost of carriage from the one place to the other if the thing can be transported after being sold; as, for example, gas, electricity, and transportation itself cannot. In the case of international discriminations, however, where tariffs protect the home market, the difference between the two prices may amount to as much as cost of carriage and the import duty on re-entry.

A trade discrimination means charging more for a thing when it is used for one purpose, that is in one trade, than when it is used for another purpose, that is in another trade. Generally trade discrimination is not feasible because of the difficulty of discovering to what use the purchaser intends putting the commodity; but there remain some important instances in which differential charges of this kind are not only possible but have become the common rule. The best example is to be found in railway freight rates. The railways sell transportation and

sell it at different prices, out of regard, as well as with regard, to the cost of the service provided. Broadly speaking, freight rates per unit of bulk or weight are higher for commodities of much value than for those of the little value. It is assumed that the greater the value of the commodity the more will purchasers pay for carriage without materially curtailing their purchases. The principle embodied in the custom is known as the principle of charging what the traffic will bear.

Personal discrimination means that one man is charged more than another simply because he can pay more, though there is neither a local nor trade basis for the differential charge. Generally speaking, we may say that by the business community all the world over personal discriminations have been sternly resisted. But in the form of income discriminations they are not altogether unknown. They may be resorted to indirectly when different qualities of a thing are supplied, provided that the higher qualities are consumed chiefly by the wealthier classes. The prices for the better qualities may be fixed disproportionately high in view of the excess of their cost over the cost of the lower qualities. Income discriminations have

been admitted with advantage into the principles of payment for certain public and semi-public services. Doctors, for instance, frequently charge patients of different classes on different scales.

It now remains to discuss the principle applied in the settlement of discriminative charges, when they are possible. It is exactly the same as the principle of the single monopoly charge, but its application is more complicated. The monopolist tries to fix the two or more prices which he finds practicable at such levels that his net returns are maximised. We may think of the monopolist as dealing in two markets. In each market he fixes the price which will be the most profitable, regardless of the price obtained in other markets, except in so far as the quantity of sales in both markets taken together must be considered because of its bearing on cost of production. It will be instantly realised how exceedingly improbable it is that the most profitable price in the one market should be identical with the most profitable price in the other. In the one it might pay to sell a large quantity at a low price, whereas in the other, in view of the different circumstances of the community served, it

might pay to sell a small quantity at a high price.

It can be proved that differential charges can be arranged so as to benefit the public. Without them much less use would be got out of railways and there would be an immense loss of consumers' surplus. Coal can be carried cheaply just because certain other things are carried only at high freight rates. Some services, indeed, could not be provided at all were differential charges not permitted. However, we must be careful to observe that the adoption with reference to anything of the discriminative system of fixing prices is by no means bound to prove beneficial to the community, and that public interests must consequently be watched with a jealous eye when it is introduced or revised.

We must not run away with the idea that a monopolist has a perfectly free hand to fix any price or scale of prices that suits him best. He is ultimately dependent upon the goodwill of the public—or, at least, on the absence of an intense degree of ill-will. People can find more or less satisfactory substitutes for most things, and will be moved to do so if they think they are being robbed by extortionate charges. Moreover, the modern State has to make a legitimate

public opinion effective when it can, and a public excessively squeezed by monopoly is likely to demand clamorously that the heavy hand of the State should be extended for its relief. And Governments can not only control, or try to control, but also nationalise services. Moreover, there is potential competition to take into account. The richer the gains of monopoly, the more will rivals be tempted into the field to get a share of the booty, and the greater will be the chance of a natural demolition of restraint of trade. So monopolists are likely to prefer large outputs and low prices to small outputs and high prices, if the direct pecuniary advantage of the former to them is not greatly inferior to that of the latter.

Finally, it may be pointed out that a public authority which monopolised a service would not be likely to aim at the highest monopoly revenue, even within the limitations defined above. It would naturally pay regard to public advantage, which is measured by consumers' surpluses.

A particular case of discriminative charges, which is known as dumping, has very much agitated the public mind in recent years. Dumping is ordinarily understood as selling an article abroad not merely at a price beneath

the home price, but at a price beneath cost of production, whatever that may mean. A dense obscurity enshrouds popular conceptions of the problem of dumping, and rough-and-ready explanations of the matter have rather added to than detracted from the obscurity. In order properly to understand dumping it is well to distinguish at the outset between different kinds of dumping.

There is, firstly, the dumping of surpluses. By a surplus we must understand a quantity of output which would never have been produced had the price for which it was necessary to sacrifice it been foreseen. In view of our inevitable ignorance of future demand, it is unavoidable that production should repeatedly exceed or fall short of the amount which would have been aimed at had coming conditions been accurately anticipated, and it is evident that the monopolist will so frame his decisions that at least he will not be short of the amount which would maximise his net gains. Consequently, surpluses arise frequently, and are more likely than not. A few moments' thought should convince the reader that, given such a surplus, the monopolist who is simply pursuing his self-interest would probably be well advised not to lower his home price and sell the whole

output at home, but to retain a fairly high price level in the home market by relieving it of some supplies even if these supplies when sold elsewhere realised only paltry sums. From the point of view of the monopolist's policy, there is nothing to prevent the price of dumped surpluses from dropping to any insignificant figure, but, as a matter of fact, they will not sell for less than the price which rules in the foreign market when they invade it. This price, nevertheless, might be beneath a figure which would leave any profit at all for the monopolist were he forced to sell his whole output at that particular price.

Another kind of dumping, which has excited a degree of apprehension quite out of proportion to its magnitude, in all probability, consists in producing an excessive supply in order to sell substantial quantities abroad at a material sacrifice for advertising purposes, or in order to oust competitors. It is questionable whether this game is worth the candle in view of the enormous foreign sales which are requisite to get a hold on a foreign market, and consequently of its enormous cost. It might be well worth the expense were it a fact that competitors could be easily put to flight and that their rallying to compete again within a moderate time would be a

miracle ; but the monopolist would be exceedingly foolish to take this for granted. Many established industries will sell for years beneath their full cost of production rather than shut down, because shutting down involves the destruction in bulk of their fixed plant. They will continue to sell so long as the price is well above the specific cost of production, that is the cost of production apart from standing charges which would not be saved by the cessation of activities. And as regards other industries, not of this kind, in which output instantly and adequately contracts as soon as prices become in any degree unremunerative, we find that the possibility of such an immediate curtailment of production implies the possibility of an equally immediate increase of output as soon as a recovery in price renders it profitable. Tersely put, it is probably the case that competitors who are easily routed are easily rallied by a hardening of the market, and that those who are not easily routed can only be defeated eventually after a lengthy and exhausting campaign. Dumping of this order is far more likely in the case of articles which are unique and for which there is no perfect substitute. It might, for instance, pay the patentee of a new breakfast food to sell

at first at a very low, even unremunerative, price until people had acquired a taste for the thing, when the price could be raised without causing people to alter their habits to any large extent.

Producing to dump without regard to an ultimate raising of price is a very different matter, and only distantly connected with the dumping of surpluses. It consists in determining before the event to manufacture such a supply of a thing that, after the home demand has been satisfied at a high or moderately high price, a quantity is left over to be disposed of in outside markets at a price which, as it is put, is beneath cost of production. That it may be profitable to act on the design embodied in this kind of dumping when the foreign sales considered in themselves entail no sacrifice has been proved by what has been already said of the principle of discriminative charges, but it has not yet been demonstrated that the policy can prove a paying one when the exported goods fetch less than their cost of production.

A favourite method of trying to shew that the policy is a paying one in the latter case is to argue that the monopolist can afford to dispose of some part of his output in distant markets at less than the expense incurred in

production, because he realises more than normal profit on his sales in his own country. But this easy elucidation of the mystery leaves us the hopeless task of explaining away the folly of the producer who, having amassed something of a fortune by his operations at home, elects to dissipate some or the whole of it by carrying on a losing trade with foreign customers. Why should he spend wealth realised out of his home trade on unprofitable trade elsewhere?

We must not, however, conclude that because this popular explanation is unsound it can never pay a monopolist to aim at selling continuously abroad beneath cost of production. We shall see that there is a reasonable account of the matter. Now it is evident from the foregoing that any reasonable account of the matter involves proving that the sales abroad leave the monopolist better off. With a view to proving this let us examine the phrase "sales beneath cost of production" and consider whether it can be interpreted in such a way that the making of an immediate gain out of producing with the intention of selling some portion of the output beneath cost of production is not unthinkable. It is apparent that cost of production must not mean the addition to the monopolist's aggregate costs

entailed by the manufacture of the addition to his output represented by the foreign sales, for if it did the kind of dumping which we have in mind would mean buying half-crowns at two shillings apiece. But cost of production may be understood as the average cost (cost per unit of output) of the whole of the industry's output. Now, foreign sales beneath cost of production so understood will prove worth while, provided that the foreign price is in excess of the addition made to the aggregate costs of the industry by the production of what was exported, when this addition to cost is reckoned per unit of the exported output. The implication is that the industry is subject to increasing returns. The seemingly unremunerative foreign sales pay because of the benefits resulting from the increasing returns. Making regular provision for the foreign market necessitates enlarging the industry and the enlarged industry brings about in the long run a lower cost of production per unit of what is turned out. The seeming loss in the distant markets may be more than recouped by the reduction in the cost of things sold on favourable terms at home.

To complete this chapter a few remarks may be offered as to the various sorts of monopoly which are found in the world. Monopolies may be classified into natural, social, legal, and voluntary. Natural monopolies arise out of the limited sources of some natural products. Social monopolies are occasioned by the peculiar relations of certain businesses to the social economy. For instance, it might not be possible for two remunerative railway lines to be laid down connecting two places ; and, even if it were, two lines would be less economical than one line. Again, competing gas companies cannot be permitted to lay their pipes in the same streets. Many social monopolies are now in the hands of public authorities. Legal monopolies are those maintained by law like patents and copyrights, which are defensible on the ground that without them much valuable inventing and writing would be so scantily rewarded as to be in effect discountenanced instead of encouraged. Many of the social monopolies enjoy legal support. Voluntary monopolies arise mainly out of combination. Among them we may distinguish the monopolies which leave much of the individuality of the combining units untouched, and those which destroy it. The

former are commonly termed "kartels" and the latter "trusts."

Recent years have seen a great increase of voluntary combinations. Some are mere unions for arranging a common policy in the matter of price; others consist in complete industrial integrations; while in between numerous varieties are to be found, which it is for a more realistic economics to classify and account for. It would, however, be a mistake to draw the inference that competition has been so outflanked that it must yield in bulk to combination. All businesses are not suited to any degree of unified control; and while in one state of development or of trade conditions an industry may lend itself to monopolisation, in another set of circumstances forces which bring about its disintegration may as surely be generated. Moreover, it might very well be that in a given industry a trust after paying for a generation would cease to pay, owing to the difficulty of detecting and appointing the most capable leaders after the process of natural business survival of the fittest had ceased to operate thoroughly within the industry. Why recently there has been so marked an increase of combinations for securing monopoly, widely extended investi-

gation is needed to explain, but there can be no doubt, as regards industrial integrations, that one cause is the large-scale organisation of finance which has appeared of late as a new and striking phenomenon in economic life, particularly in the United States. The tentative responses of State functioning by way of control will be watched with the deepest interest. It is impossible to foretell as yet the exact mode in which public well-being will be safeguarded when requisite.

Of combinations intended to control the sharing of wealth between the factors engaged in producing it, such as trade unions and employers' associations with that object in view, mention will be made in Chapter IX.

CHAPTER V

MONEY

SOMETIMES the explanation of the purchasing power of money is put forward as a distinct and independent theory which is no part of, though closely analogous to, the general theory of value. I shall hope to demonstrate, however, that it contains nothing fundamentally new. In the problem of the purchasing power of money the general theory of value is again ensconced, but so veiled with peculiar conditions which the student has not previously analysed that he is not to be blamed if at first he fails to detect beneath its disguises an old friend.

In order to get a proper grasp of what the true explanation of the purchasing power of money is, it is imperative to bear in mind that money is essentially a commodity or a promise to deliver a commodity. The truth of this statement becomes apparent when we briefly note how the use of money has evolved. Originally, no doubt, every exchange was

effected by the process of barter, which is apt not only to try the patience, but also to fail to effect satisfactorily the purposes of exchange. Its successful completion implies in every case a perfect double coincidence of wants. In order to do business by barter, it is necessary that a person should find some other person who not only possesses what the first wants, but also wants what the first has to offer. And it implies many other conditions which are notable by their absence commonly. The exchange of cattle on equitable terms for a limited quantity of small things would be found difficult, since a living ox is indivisible. Moreover, when there is no common medium of exchange, it is not easy to find out what the exchange value of things should be in view of the state of demand and supply. To know the value of wheat involves knowing how competition has settled its exchange rate against iron and clothing and other forms of food and furniture and what not. With the object—though not perhaps with the deliberate design—of escaping the multitude of inconveniences associated with barter, people got into the habit of selecting one or a few things to receive in payment for what they sold and to make purchases with. The thing or things chosen were naturally articles

in general demand. It need hardly be remarked in addition that they tended to be commodities adapted by nature for the purpose of effecting exchanges; and that a process of natural selection, or substitution, as it is called in economics, took place whereby the most suitable of these things displaced the less suitable. The chief properties of a suitable medium of exchange may be enumerated. It must be divisible without losing in value, to enable small purchases to be made with it; comparatively durable, so that it does not depreciate in value when it is held for a time; moderately constant in value for the same reason; and moderately precious at the time when it is used so as to contain a convenient value in a convenient bulk and weight.

Let us argue out the theory of money on the simple supposition that every time an exchange is effected some money commodity to the value of the exchange passes hands; that is to say, let us provisionally ignore credit money, the peculiarities of which will be treated later. It has been alleged that the problem of the value of money even under these simple conditions is inherently alien to the problem of the value of things, because

pieces of money are not wanted to keep but to pass on. However, to this objection it may be retorted that all the things that we buy are not goods which we retain permanently or for long. Many of the things really sought when we make purchases are the services associated with objects which are passed on to perform the same services for other people when so much of each service as we require has been used up by ourselves. When we habitually have recourse to railway trains, we do not and cannot buy them for our private use, but we take on each occasion from a public conveyance just as much of the service of transportation as we require. It is not only money that circulates, as it is put : railway trains and ships, and telegraph boys and hired waiters circulate also, and in circulating do work for which the community is ready to pay a price.

Let us consider next how the prices of these things that circulate are settled. In dealing, say, with the price of cabs in a community, we have to analyse the forces of demand and supply. Certain utilities consisting in rides in cabs are demanded, and the supply with which we are primarily concerned is the supply not of cabs but of the services performed by cabs. These services, however,

are inseparable from cabs, so our inquiries lead us to the cost of production of cabs and an equation connecting the supplies of conveyance or transport obtainable from cabs with different quantities of them. The equation sought expresses indirectly the rapidity of circulation of cabs, so to speak. Now the problem of money is very like this problem. In the case of money, the thing demanded is facility for effecting exchanges, and the quantity of this facility depends upon the number of things with which it is associated (that is the quantity of coins of each sort), and their rapidity of circulation. Broadly speaking we may say that rapidity of circulation refers to the number of times that a thing can repeat in a given period the services associated with it. It is true that the demand for money is a derived demand reflecting the demand for other things, but so is the demand for many articles.

Coming back to the case of the cabs, we may say that the price of cabs is settled by the demand for them in relation to the marginal cost of production of different quantities of them; but the demand for them is derived from the consumers' demand for rides, and the supply forces, while expressing directly the cost of production of different quantities of cabs,

express indirectly the cost of production of rides when rapidity of circulation is taken into account. Just as the price of a cab is determined by such influences, so is the price of a piece of money. If the money commodity be gold and the unit be an ounce, the demand for ounces of gold in relation to the marginal cost of production per ounce of different quantities of gold settles the value of gold money; but this demand and supply, so long as we confine our attention to the monetary uses of gold, is derived from the demand for exchanging power on the one hand, and the supply of exchanging power associated with different amounts of gold money on the other hand.

Next, we must take into account the fact that gold is not demanded merely for money but also for uses in the arts. The recognition of this fact brings with it few complexities. It simply involves noting that the demand for gold is a composite demand, and that to get the complete demand we must add to the demand for gold as money—the demand for gold in the arts. Gold is by no means peculiar in being the object of a composite demand. Probably most demands are composite. Wood, for example, is demanded for buildings, furniture, boats, and numerous other things; and the demand for wood is made up of the

demand for it for building, the demand for it for furniture, the demand for it for boats, and so on. However, the composite nature of the demand for gold being allowed for, it does become necessary to lay down another proposition to complete the theory of the purchasing power of money. This other proposition denotes the manner in which supplies of gold are distributed between its two broadly distinguishable uses, and runs as follows: the distribution of gold between its uses for money and in the arts is such that its marginal utility is the same in both uses; which means, in other words, that the exchange value of an ounce of gold must equal what an ounce of gold will buy. An illustration of the correctness of this proposition will be found in the fact that the price of gold bullion in England never departs by more than a fractional percentage from £3 17s. 10d. per ounce, that is 934 pence per ounce. This apparently curious fact, which has caused not a little misapprehension, is simply a result of the legal decision that a sovereign, which equals 240 pence, shall contain about $\frac{240}{934}$ of an ounce of gold.

The second proposition relating to the value of money having been enunciated and defended, it must next be pointed out that

even this proposition, defining the principle on which gold is distributed between money and the arts, is not, when stated in general terms, peculiar to the doctrine of money. It holds of all cases where demand is composite. To take again our previous example, wood would be so distributed between house-building, furniture-making, and boat-building, that the marginal utilities of wood for all these purposes would be the same.

In order to bring the theory of money exactly into line with the theory of the prices of things, it must finally be remarked that what is designated purchasing-power in the case of money corresponds with what is designated price in the case of other things. Media of exchange cannot have a price proper, that is an exchange value in terms of money, because the exchange value of a thing cannot be expressed in terms of itself. But the price of a thing means the amount of money that it will buy, because the price is the amount of money which will buy it, and exchange is a simply convertible relation. Now what a unit of money will buy is called its purchasing power. Consequently, employing the term "price" broadly, to indicate exchange value and not merely exchange value in money, we may say that the purchasing power of money

is the price of money, and that the price of other things is their purchasing power in goods.

The statement is not infrequently met with that the true theory of money is the quantity theory. The statement is correct if it is interpreted to mean that the fundamental proposition laid down in the doctrine known as the quantity theory of money is absolutely true. But it is not correct if it is interpreted to mean that this proposition sums up the whole explanation of the exchange value of money. As a matter of fact it forms only a part of the complete theory. It merely outlines the character of the demand for money and expresses no opinion as regards supply and the relation of this to demand. It is as imperfect as a quantity theory of the price of fish, or any other reproducible article, would be. The quantity theory of money declares that the purchasing power of money varies inversely as its quantity, and in the same proportion. The evidence of its truth lies on the surface. In the absence of credit money, the extent of the means for buying things within a given time may be regarded as the number of coins (which we may assume to be all of one kind) multiplied by their rapidity of circulation within the given

time; and there is no reason to suppose that rapidity of circulation will be affected by variations in the supply of coins. Moreover, it is apparent that the quantity of exchanging which each unit of money will effect in any one transaction must depend on the quantity of exchanging to be done. The agency intended to be employed in carrying out exchanges is used up, and just used up, in carrying them out, owing to competition on the part of people possessing money with which they intend to make purchases. And the quantity of exchanging to be done cannot be altered by variations in the extent of the means for effecting exchanges. So the purchasing power of money must vary inversely and in the same proportion as the supply of monetary units. This doctrine, it will be observed, is implied in our earlier exposition, but something is gained by making it explicit.

Countless illustrations of the truth of the quantity theory might be gleaned from the pages of history. Prescott, in his *History of the Conquest of Peru*, writes thus of what happened after the division of the spoil among Pizarro's followers at Cuzco:—"The effect of such a surfeit of the precious metals was instantly felt on prices. The most ordinary articles were only to be had for

exorbitant sums. A quire of paper sold for ten *pesos de oro*—the normal purchasing power of a *peso de oro* was, we are informed, equal to the purchasing power of something between £2 and £3 to-day—"a bottle of wine, for sixty; a sword, for forty or fifty; a cloak, for a hundred,—sometimes more; a pair of shoes cost thirty or forty *pesos de oro*, and a good horse could not be had for less than twenty-five hundred. Some brought a still higher price. Every article rose in value, as gold and silver, the representatives of all, declined. Gold and silver, in short, seemed to be the only things in Cuzco that were not wealth."

The quantity theory of money, of course, holds also for the totality of money, including credit media of exchange, which will be dealt with next

At last, with the introduction of credit money, we are brought into touch with a new fact. Broadly speaking, credit money which is not inconvertible consists in documentary promises to pay commodity money, and these promises, when complete confidence is reposed in those who are pledged by them, happen, curiously enough, to be competent for effecting exchanges. This is the only case, so far as I am aware, in which

the promise to provide an article serves the purpose of the article. The promise of a loaf of bread will not satisfy hunger, but the promise of so many sovereigns in the documentary form of a cheque or a note may satisfy the requirements of people as completely as sovereigns, and consequently enable exchanges to be made. It is essential, of course, that the public should place implicit trust in those who make the promises, that is in the persons or institutions issuing the paper money. Were such undertakings not met when their fulfilment was asked for, this trust would be destroyed. Consequently it is essential, if bank-notes are to circulate freely, that the bankers responsible for them should hold such reserves of bullion that nobody who wanted a note changed into gold would find his request refused.

How much these reserves should be at any given time it is not easy to say, but bankers know from their experience what is the safe limit; and it is possible to point to the influences whereby the normal ratio of credit money to standard money (that is, coins of the money commodity) circulating in the country is determined. When the public is entirely without doubt as to their safety in accepting paper in payment of debts, paper

is taken as readily as standard money, and the proportions of each in use are settled merely by the habits and customs of the people, which, generally speaking, give expression to what is convenient. A person in England will make certain payments with cheque, certain payments with notes, and others with sovereigns and small change: whenever he has to hand over money for goods, he will select the form of payment which best suits his convenience. Hence the proportion of credit money to commodity money in use tends to settle at a figure which reflects public convenience. When the amount of credit money outstanding is in excess with reference to this criterion, it is essential that sufficient bullion should be held in reserve against its redemption. And, inasmuch as the demand for credit money fluctuates, which means that for a time less than the normal volume of it may be wanted, bullion reserves should be at least adequate to allow of as large a shrinkage of paper money as is thinkable in the light of experience. Moreover, in calculating what is needful we must reckon the demands for bullion for the purposes of international trade. Gold is required from time to time to make foreign payments, as we shall learn in the next chapter. At

first international indebtedness is recognised or discharged by means of bills of exchange, but ultimately, when final settlements have to be made, the balance must be met with exportations of gold.

This will be a suitable place to point out that token money (that is coins like shillings and pence which have a face value in excess of the value of the metal contained in them) may be regarded as notes made of metal. For convenience they are made complete legal tender up to certain amounts when issued by Government, as they are usually at the present time. It may also be pointed out that a limited amount of inconvertible paper money may circulate in a country without depreciating in value.

In 1844 the English Government made a successful attempt to limit the issue of notes by the Bank Act of that year, but whether this measure proved to be beneficial all round is problematical. While restricting the issue of notes, the Bank Act had no bearing upon the cheque system, the immense ascendancy of which of late years could hardly have been foreseen. At the present time the bulk of the payments made in England are made in the form of cheques. At first sight the cheque system would seem to be a

device which could have no effect upon the quantity of circulating money one way or the other. On the face of it, the system simply enables a person who has deposited his money in a bank to give authority to somebody else, in the form of an order, to draw that money out instead of his drawing it out himself. But on peering more curiously into the matter we shall detect that, once this method of making payments has appeared, it becomes possible to extend enormously the quantity of media of exchange in use. Cheques take the place of cash instead of serving merely as a means of getting cash. They effect millions of pounds' worth of exchanging without the use of a single sovereign.

We shall have to enquire how the process whereby the quantity of the media of exchange is magnified through the agency of cheque payments is actually controlled in a modern business economy, and what its effect is on the state of trade, but first it will be desirable to remind ourselves of the manner in which the limited supplies of gold in the banks automatically stop the expansion of credit money after it has reached a certain figure. Bankers from their experience and from reading the signs of the market know approximately what demands to expect for gold for exporta-

tion, when the exportation is connected with the state of foreign trade, and what demands to expect for gold in the form of cash for current use in the country, in view of the volume of credit obligations which have been created by the bank through loans or the discounting of bills. When bankers feel that the limit of safety is being transgressed in the creation of credit money, by the granting of accommodation and the discounting of bills, and that if it continues at the old rate the gold in the country will be insufficient to meet the demands for gold, so that banks will be compelled to suspend cash payments, they begin to discourage requests for credit by raising the price at which they are prepared to grant it, that is by raising the discount rate.

The situation is complicated in this country by the fact that we have been reduced in a large measure, not by law but by the drift of events, to a one reserve system. Bankers place their reserves in bulk, or in large part, with the Bank of England, and thus the Bank of England becomes the chief guardian of the bullion reserve of the country. A theoretical objection to the arrangement at once suggests itself. The Bank of England might feel the necessity of curtailing overdrafts,

accommodation and discounting as much as possible, and to that end might put up the Bank rate; but conceivably other banks might have placed very large reserves with the Bank of England, repayment of which they had the right to ask for in gold, and they might feel that they were in an absolutely secure position and could safely undertake an even greater mass of credit business. Consequently the other banks might keep their discount rates down, so that the only effect of the action on the part of the Bank of England would be to drive its customers away to the other banks. As a matter of fact this seldom or never happens. It has become a custom, broadly speaking, for all the banks in the country to follow the lead of the head custodian of the bullion reserve, that is the Bank of England, in the matter of the discount rate. How and why this custom arose, and in what way the Bank of England takes steps in exceptional circumstances when it becomes necessary to force some discounters to follow its lead, are interesting questions which, however, we shall not proceed to consider here, since our present purpose is to merely show how the activities of banks affect the quantity of money in a country, and not to discuss the principles and practice of banking as a business.

A few words more may be said, nevertheless, of the problem of the bullion reserve. One advantage of a small reserve is that it compels the bank or banks in charge of it to keep a sharp watch on the state of business and nip in the bud such an excessive issue of credit as would deplete it. But the small reserve has grave countervailing disadvantages. Foreign demands have to be met out of the reserve, and of exports of bullion over-trading may not have been the cause, but as soon as the reserve begins to shrink, if it is small, it becomes necessary to raise the bank rate with the object of restoring it and reducing the claims that can be made upon it. A rise in the bank rate checks importations of goods, and relatively stimulates exports, because by limiting the quantity of borrowed money in the country it drags down home prices. It may occasionally happen, therefore, that business as a whole has to be excessively discouraged by a high discount rate at a time when it requires encouragement rather than discouragement. Were the reserve very substantial, a small elevation of the bank rate would frequently be all that was necessary after foreign withdrawals of bullion, and possibly in many cases no alteration in the

bank rate would be called for. At the present time in more than one country the problem of the reserve is engaging the attention of statesmen, bankers, and other business men.

The manner in which banks in the ordinary course of their business, which may be tersely described as dealing in credit, can augment or diminish the quantity of money, broadly regarded, in a country, is of particular importance in relation to a curious phenomenon known as the trade cycle. Trade does not flow along uninterruptedly in any modern community. It has its ups and downs even if it is viewed in the mass. Many of the fluctuations in business briskness, which one would naturally expect, take place in different industries at about the same time, as one would not so readily expect. In other words fluctuations in trade tend to synchronise in the different industries, so that at any one time the business of a country in the aggregate tends to be depressed or the reverse. This synchronism may be accounted for as follows. The business of a modern community makes up an organic whole, every part of which is directly or indirectly connected with every other part. If engineers are slack the demand for

steel sags down and the slackness is passed on from the producers of iron and steel goods to the producers of the things out of which they are made. Again, when the engineers' business is slack, earnings in it are reduced, with the result that the people engaged in it make fewer purchases than they did previously. Hence the depression tends to be passed on to the industries which supply their needs. It must be added, moreover, that sluggishness in a trade is apt to generate inertness and an oppressed state of mind in those who are conducting it, and that this psychological mood is probably communicated to other business men through the intangible avenues which social psychology recognises; and when employers are in a state of depression they are prone to shun risks, take a gloomy view of the future and curtail their undertakings. It is comprehensible, therefore, that the bad trade, wherever it starts, tends to spread; and it may be, moreover, that there is some common cause of industrial collapse which bears directly on many trades at the same time.

Another and even more striking feature of trade fluctuations is their periodicity. They recur with a certain degree of regularity. Trade depressions are not perfectly periodic, but they are not dispersed in an altogether

irregular way. A degree of periodicity seems to rule in the midst of much irregularity. It usually happens that an interval of some seven, or ten and a half years, or thereabouts, intervenes between the culminating points of two periods of bad trade. The explanation of this curious circumstance has been attempted by many economists, but it cannot be said that as yet it has been quite satisfactorily accounted for. Some incline to attribute it to a cyclical variation in the seasons which affect harvests; but the nature of this variation, if it exists, is still obscure. Others are disposed to assume implicitly or explicitly that there is a cyclical movement in what may be called the social mind or the public attitude to affairs; and yet others imagine that under competition the rivalry of individual producers with one another automatically induces over-production for which collapse is the unavoidable penalty. Which of these causes are real and which really count has not been conclusively determined hitherto; and our purpose now that we are dealing with the matter of money is not to discuss them but to consider how trade oscillations are and can be influenced by the operations of banks in the way of restricting or enlarging the credit media of exchange.

However briskness of trade may have been initiated, it is certainly true that once it has appeared an increasing demand is made upon banks for money. Business men are anxious to get the means of undertaking yet more of the profitable business that is being offered and increase their earnings. There is consequently a larger demand for overdrafts and a larger offer of bills for discounting; and it is undoubtedly a fact that when the means of prosecuting further business are readily furnished avenues are opened for over-trading. Moreover the rise in prices which the augmentation of money naturally brings about, according to the quantity theory of money, itself tends to stimulate production. Banks are, therefore, placed from time to time in a position in which they can either urge on the business community in a speculative career which culminates in disaster or apply the curb and prevent it from rushing into danger in its excitement. Banks are increasingly realising how they are placed in this matter and recognising their obligations. One difficulty, naturally, is to decide at what point good trade which is sound becomes over-trading which is unsafe; and there is another difficulty in that banks may have to persuade themselves to sacri-

fice some profits in the interests of the community.

We have learnt that variations take place from time to time in the purchasing-power of money, owing to the influence of the trade cycle. When trade is good prices rise. It might be thought that when trade was good prices would fall, because when trade is good production is stimulated, the output increases, and there is more for money to buy. At the same time, however, money power increases in consequence of an augmented rapidity of circulation of money and larger issues of credit money, as we have seen, and this latter influence more than counteracts the former. It is now important to notice that the purchasing-power of money alters not only cyclically but also independently of the state of trade. On the one side the value of money is affected by the volume of production. Inventions which render production easier increase the supply of goods and tend to lower prices. On the other side, it is affected by supplies of gold and the development of banking. New discoveries of gold and the introduction of easier methods of winning it, by adding to the supplies of bullion upon which the quantity of money

in gold-using countries is based, are bound to raise prices, other things being equal. Now changes on the side of demand and supply with reference to gold are not likely to occur together in such a way that the purchasing-power of money is unaffected; and we actually find on studying the figures which indicate the level of prices that great alterations have taken place from one period to another in the purchasing-power of money. Roughly speaking, prices fell, largely in consequence of the effects of the industrial revolution, throughout the first part of the nineteenth century. Afterwards for a few years they kept moderately stationary as the new productive forces slackened off and banking developed so that substitutes for coins were largely introduced. A rise in prices was brought about by the gold discoveries in the " 'fifties "; and from the early " 'seventies " until nearly the close of the nineteenth century prices fell materially, partly in consequence of the progress of the community in the matter of productive methods, and partly in consequence of the adoption of a gold currency by many countries which had previously used silver. Of late years there has been another change in the value of money: since about

the middle " 'nineties " prices have been rising.

Variation in the purchasing-power of money may be a serious matter. When prices fall constantly the business world may be discouraged and thrown into a state of depression. On the other hand, when prices rise constantly business may become over-excited ; and certainly the real incomes of the wage-earning classes are automatically reduced so that discontent is engendered, and an era of disturbance in the distribution of wealth is ushered in.

Indeed, there is no economic phenomenon which remains unaffected by an alteration of the purchasing-power of money. The rate of interest will probably be affected—as the reader will understand more fully after studying Chapter VII.—because an anticipated rise in the value of what is saved naturally stimulates saving, while an anticipated fall in its value has the reverse effect. And the relative prices of different classes of securities will undoubtedly shift in a disturbing way. When prices ascend, for instance, the value of shares in property, say of shares in industrial concerns, will ascend, because the value of the property to which they relate, expressed in money, will ascend ; but

no ascent will take place in the value of securities standing for loans of definite sums of money which have to be repaid at some time, for example, in the value of consols. Nevertheless, we must not conclude offhand that for every reason steady prices are theoretically best for the community. One thought which should give pause may be expressed. When prices are steady a proper share of the benefits of progress do not automatically accrue to the wage-earning classes, and consequently repeated re-adjustments of wages become needful. Possibly the ideal would be a fall in prices exactly corresponding in degree with productive progress; but all economists would not endorse this pronouncement, owing to the effect which they think falling prices have upon the directors of industry; and in any event it would be impossible to bring about exactly, or even approximately, such a variation in the purchasing-power of money. From a practical point of view, when all advantages and disadvantages are weighed, it is probable that steady prices would be best if they could be secured. A suggestion has been made that countries, acting in concert, should regulate the quantity of money with reference to index numbers of prices so that

prices are kept approximately stationary; but, though theoretically such a scheme could be carried out, he would be a rash prophet who should venture to foretell that it is really feasible. However, we may conclude that reliable index numbers of general prices ought to be kept and made public (as they are), and carefully watched by the business world (as they are not ordinarily) with a view to orders relating to the future and adjustments of salaries and wages. Index numbers of prices are figures, scientifically calculated from the prices of a large number of different things, which indicate how on an average prices are moving.

No discussion of money would be complete without some reference to bimetallism, a subject which links on to the question of the purchasing-power of money. The agitation for bimetallism was very strong some years after the fall in prices which began in the "seventies," but of late it has collapsed, and it can no longer be held to play a noticeable part in current economic movements. It was desired by some with the object of stopping the fall in prices; by others with the object of steadying prices; by others with the object of creating a par of exchange

between the gold-using and silver-using countries; and by yet others with the object of enhancing the value of property in silver, or at least of stopping its depreciation.

Bimetallism means making the standard of value an alternative consisting in a given quantity of gold or a given quantity of silver of a larger amount, so that for currency purposes silver and gold are interchangeable at a fixed ratio. The proposal was that three or four leading countries should combine and fix a ratio to be observed in the currency laws of the countries concerned. It was argued that in this event the ratio all over the world between the values of gold and silver would be drawn to the fixed ratio decided upon. Theoretically, the argument was flawless, at any rate for moderate variations in the supplies of either gold or silver, on the assumption that a substantial proportion of the supplies of these metals in existence was devoted to monetary uses. If silver became very plentiful, so that it tended to fall in value with reference to gold, masses of silver would displace gold in the currencies and reserves of the bimetallic countries, and outside these currencies and reserves supplies of gold would be consequently augmented while supplies of silver

would be reduced. Similarly if gold became relatively more plentiful corresponding effects would follow. Either process would continue until the resultant alterations in the outside supplies of gold and silver were sufficient to bring their market values to the fixed ratio. Were the scheme adopted with a ratio which would make it work at first, it would only break down if the supplies of one of the metals became so large as to result in the complete ejection of the other metal from the currencies of the bimetallic countries. Comparatively successful bimetallic arrangements were made by certain countries many years ago ; but it was realized by the far-seeing during the late agitation that immense practical difficulties lay in the way of a revival of the system on the basis of an agreement between three or four leading countries.

If bimetallism were adopted, and the exchange ratio between gold and silver were made such that some silver would be attracted into currencies, prices would be somewhat elevated because the bullion basis of currencies would be augmented by the incorporation of the silver. Also fluctuations in the purchasing-power of money might be lessened, if supplies of silver did not fluctuate

much more than those of gold, because as gold got scarce silver would tend to fill the gap made in the currency, and when silver got scarce gold would tend to fill the gap left. And there would obviously be a par of exchange between the gold-using and silver-using countries. A par of exchange is provided when the standards of value in the two groups of countries do not vary independently. When they vary independently, a rise or fall in the value of silver with reference to gold naturally causes disturbance in the trade between the two groups of countries.

The inducement to make the bimetallic experiment lost its power after prices began to rise; and before that it had been weakened by the closure of the Indian mints to the free coinage of silver, which meant that the quantity of silver coins in circulation was so regulated by the Government that their purchasing-power was kept constant with the purchasing-power of gold, and a par of exchange between gold-using countries and India was created.

CHAPTER VI

INTERNATIONAL TRADE

THE theory of international trade is another section of Economics which one may be tempted to represent as something apart from the general theory of value. It is a commonplace to say that value in the home trade is settled by cost of production; and the statement is broadly accurate, because value in the home trade is determined by the marginal costs of different quantities of a thing in relation to the demand for different quantities. On the other hand, it is equally a commonplace to affirm that international values are not settled by the principle of cost of production, or at any rate not directly, but by the principle of comparative cost. Ricardo seems to have been the first to propound this fruitful doctrine; but it was left for later writers to make fully explicit that the doctrine of comparative costs is an integral part of the theory of home values. This latter is one of the ideas that I

want to make outstanding in the present chapter; and there is involved in it the further idea that in the form which the theory of value assumes in the theory of international trade marginal incidents play parts as pre-eminent as those assigned to them in the economic scenes which we have already contemplated. At the same time, of course, I shall have to make perfectly plain the salient points in the doctrine of comparative costs.

The best way to realise the relation of part and whole which subsists between the two theories referred to, and at the same time to get an understanding of the principles of foreign trade, is to begin by dissecting the more complex of the two theories, that is the theory of home price. The theory of home price may be helpfully regarded as consisting of two parts, first, of a pure theory of exchange, or theory of barter, as it is sometimes called, and, secondly, of a theory of the reactions which follow upon the process of exchange. We shall at once analyse the former theory.

It is premised that certain articles have been produced in certain ratios and that there exist given quantities of these articles to dispose of. The problem is to determine

at what rates they will exchange with one another. The solution of the problem is afforded by the statement that they will exchange in proportion to the relative demands for them. Of two things, the supplies of which are equal, the one for which there is the greatest demand will be the one to realise the highest price.

Now, the value of things having been settled in this way, it is sure to be found that the agents producing some of them are more richly rewarded than the agents producing others. The producers of the things that sell best have larger net receipts to share out than the producers of the things that sell indifferently well. Consequently, the industries furnishing the former articles will prove exceptionally attractive to such labour, capital, and enterprise as is seeking occupation in the community, and such as can be shifted from their present uses; and at the same time the relatively meagre earnings of the factors engaged in the industries producing the latter articles will exercise an expulsive force upon such of these factors as can be transferred to other purposes, and repel the supplies of productive power which would otherwise have been absorbed by the less successful industries. As a result of the crea-

tion of these two sets of forces, the fortunate industries will expand and the unfortunate industries will contract, until a position of equilibrium is reached at which labour of the same capacity in equally agreeable occupations will tend to earn the same, and the remuneration of capital, so far as industrial risks are identical, will tend to be everywhere the same. Hence the conclusion that within an area over which competition rules and throughout which capital, labour, and enterprise are comparatively mobile, things will exchange according to their marginal costs of production.

Thus, for our present purpose, may the theory of the home trade be portrayed—as a union of two distinguishable doctrines. It must not be supposed, of course, that the processes embraced by the one doctrine take place independently of the processes embraced by the other. The two sets of processes go on concurrently so that normally there is no noticeable breach between the prices of things and their costs of production.

Now the fundamental distinction between home trade and international trade consists in the fact that in the latter the second set of processes, which I have called the reactions, cannot have the same free play as in the

former. In the former they operate strongly between the most widely distant parts ; but in the latter they weaken or cease when the boundaries of countries have to be crossed. A perfect example of the circumstances of foreign trade would exist in the home trade were it a fact that between two contiguous parts of a country trading with one another there could be no passage of labour and capital. Imagine a trade under such conditions between the English counties of Lancashire and Yorkshire, and imagine that in some peculiar way, owing to its climatic or geographical conditions, or the nature of its soil, Lancashire is exceptionally favourable for producing in. When trade opened between Lancashire and Yorkshire the most paying industries in Lancashire would flourish at the expense of the less paying, and the same thing would happen in Yorkshire. To that extent the reactions referred to would be set in motion. But when these reactions, working within the two fields, had brought about their fullest effects, it would still be true that earnings in Lancashire would be higher than earnings in Yorkshire, despite the fact that earnings, whether of labour or capital, would be equalised throughout Yorkshire and would, at the

same time, be equalised throughout Lancashire. In enunciating the proposition that within each of these areas earnings would be equalised, of course I mean to imply, in the case of capital, when allowance is made for difference between risks, and, in the case of labour, when allowance is made for differences in respect of the capacity of people and the general amenities and difficulties of the various occupations pursued. In this fanciful picture we have an exact representation of the conditions of the problem of international values.

The next question to ask and answer, and one to which a convincing response can be given in a very short space, is why labour and capital are comparatively immobile internationally. The answer, as regards labour, is because patriotism, differences of language and national customs, and attachment to the surroundings, both geographical and social, in which people have been born, naturally keep them at home, as a rule, unless great inducements are offered to them to change their country, and even against very great inducements. And, as regards capital, the answer is that the capitalist feels that his property is more secure when it is so located that he can watch its use,

and when the conditions attending its use are so thoroughly known to him that he can, without much trouble and delay, take the requisite steps to protect it if prudence so dictates. Of course, we should be mistaken in saying that labour is absolutely immobile internationally. Labour flows from any centre all over the world, but it flows with less ease between places with different languages than between places with the same language, with less ease again between different empires than between regions forming parts of the same empire, and with less ease yet again between a country and its colonies than between different parts of the same country. Capital also overflows national boundaries, but only as a rule under the persuasion of a more than usually generous rate of interest; and in so far as capital goes abroad, it will be found that its favourite investments are public securities, and such industrial stock as is closely related to them.

As we have now formed a general idea of the problem of international exchange we may at once proceed to its detailed solution. It will be convenient to do so by laying down a series of propositions. The one which is logically the first is the following, that

trade cannot be opened between any two countries unless there is a difference between the comparative values of transportable things in each of them. I speak of comparative values instead of comparative costs so as to include the trade in things which are not, or cannot be, produced in one or more of the trading countries. By comparative values is meant the ratios of values in the two countries. Let us suppose there are two countries only and two commodities only, and for the sake of simplicity of exposition let us assume that both countries use the same kind of money, and that there is no cost of carriage. Then, if the countries are England and Germany, and the commodities are timber and steel, and these commodities fetch respectively 20s. a ton and 40s. a ton in England, and 25s. a ton and 50s. a ton in Germany, a permanent trade cannot arise because in both countries steel is just twice as expensive as timber. Trade of a kind would appear in which England would export both steel and timber and import money, but this trade would come to an end as soon as the level of prices was the same in both countries, timber and steel realising respectively in both England and Germany, 22s. and 44s., let us suppose. Of course as money left Germany for England

prices would fall in Germany and rise in England, and when the point was reached at which the prices of both commodities were the same in both countries there would be no advantage in sending either commodity abroad, because when sent abroad it would realise no more than it would fetch at home. Hence our first proposition is proved that comparative values must differ if there is to be permanent trade between countries.

The second proposition to be enunciated and defended is two-sided: that when a position of equilibrium in international trade is reached (a) comparative values will be identical, and (b) in a given period the total value that a country exports will equal the total value that it imports, apart from cost of transport which we shall continue to ignore to expedite our argument. The prior section of this proposition is in reality a corollary from the first proposition laid down, for it is apparent that so long as a difference between comparative values remains there will be a disposition on the part of business men in both countries to increase or decrease their exports. The existence of a difference between comparative values is sufficient evidence of the profitability of their doing so. At first, however, one may feel a difficulty in realizing how

comparative values which were different can become identical. The explanation is to be found in one, or the other, or both of these circumstances : (1) that altering the quantity of a particular thing produced in a country is likely to alter its marginal cost of production, and (2) that when an article ceases to be produced in a country, so that all its supplies of the article are imported, additional imports must lower the value of the article in consequence of the law of diminishing utility.

Let us take the case of two countries, say England and France, one of which, say England, is exporting cotton goods and the other exporting wheat. At first let the cost per piece of cotton goods and per bushel of wheat respectively be 40s. and 21s. in England, and 41s. and 17s. in France. Trade will arise between the two countries, as we have seen, France exporting wheat and England exporting cotton goods. When England exports the cotton goods to France, which were not previously sent there, England's cotton industry must naturally expand, and the result may be that the marginal cost of production of the cotton goods will eventually drop to 39s. a piece. Correspondingly, England's importation of wheat will cause a contraction of her wheat farming, with the result

that the marginal cost of wheat may drop to 20s. In France, at the same time, reciprocal effects will have been wrought on cotton producing and wheat producing, so that costs there may have become respectively 40s. and 18s. Further trade will bring about further alteration in relative costs of production in both of the countries, and finally a position may be reached in which the comparative costs are 38s. 6d. and 19s. in both countries when England is exporting 76,000 pieces of cotton goods annually and receiving from France 154,000 bushels of wheat. This would be the position of equilibrium, for comparative costs would be identical in the two countries, and England would be sending goods to France of the annual value of £146,300 (38s. 6d. \times 76,000), and receiving from France goods of the same annual value (19s. \times 154,000). Were trade to expand still further, France receiving more than 76,000 pieces of cotton goods and exporting to England more than 154,000 bushels of wheat, over the last step in trade loss would be incurred. This step would therefore be retraced, under the influence of the new difference between comparative values which it created.

The objection may be raised that though the state of affairs depicted above is possible,

it is not inevitable and that the two countries might go on trading indefinitely without comparative costs in the two countries becoming the same. This is a perfectly valid objection, but if what is supposed happens, trade would continue until one industry had disappeared in one of the countries at least. Let us postulate that trade does reach such a position; that England sends to France 100,000 pieces of cotton goods, and that the French cotton industry disappears. Let it be that the costs in England are 39s. for cotton goods and 20s. for wheat, their comparative values in France being 40s. and 19s. Then, if trade still increased in volume the value of cotton goods would fall in France, the cost of wheat rising, let us suppose, until comparative values in France were equal to comparative costs in England, or until farming disappeared in England, in which case each country would be left with one exporting industry only, and the quantity of exchanging between the two countries would advance until, under the operation of the law of diminishing utility in both countries, comparative values would become the same. We thus see that a limit at which comparative values are identical is inevitable. To this theory the admission of more countries and more commodities, and

the introduction of cost of carriage make no essential difference. The peculiar case of international trade, known as "dumping," has already been dealt with in Chapter IV.

It remains to establish the latter half of our second fundamental principle, namely, the well-worn statement that exports pay for imports. The truth of this statement has been canvassed again and again, and at first experience would seem to lend support to the sceptical. When we examine the statistics of imports and exports of different countries we do not find a single case in which the two appear to balance. Further thought, nevertheless, will probably lead us to the view that the pronouncement that exports pay for imports, the correctness of which is implied in the reasoning above, is justified.

Were it the case that in international trade no credit was given, that people in one country never made loans or gifts to people in another country, that nobody travelled abroad, and no ships coaled and refitted abroad; and were it a fact that the intangible services performed by people in one country for people in another country were all entered in the statistics of imports and exports—in this event it is obvious that exact correspondence (apart from cost

of carriage) between the recorded imports and exports of the two countries would be inevitable. It would be inevitable because in international trade the only final form of payment must consist in goods, including bullion, or services. But actually equivalence is not to be found, because all the circumstances which have been ruled out of our hypothetical case exist in actual practice.

The quantity of international loans is enormous, and for a substantial proportion of them Englishmen are responsible as lenders. When a foreign loan is made the exports of the lending country are stimulated, and so are the imports of the borrowing country. Imagine, for instance, that people in England invest £1,000,000 in Canadian industries. Then at first the quantity of money in England is diminished so that prices fall, and the quantity of money in Canada is increased so that prices rise. Consequently Canada becomes a good market to sell in and a bad market to buy in, while England becomes a good market to buy in and a bad market to sell in. Extra buying from and reduced selling to England, and extra selling to and reduced buying from Canada, continue until the level of prices in the two countries has been brought to the old level,

that is, until Canada's imports in relation to her exports have advanced by £1,000,000 over what was normal, and until in England exactly the reverse has happened. And just as loans and their repayment disturb the balance of trade, so does the discharge of indebtedness in the form of interest on loans. The country which has to pay in foreign parts annual interest to the amount of, say, £5,000,000 must have an annual excess of exports to the value of £5,000,000, in comparison with what the balance of its trade would have been otherwise.

The way in which the balance of trade is influenced by the expenditure of travellers abroad and by the coal and food received by vessels abroad is more immediately apparent. Whether a German sends goods to an Englishman residing in England, or provides him with them when he is on German soil to consume them there, is a matter of indifference as regards the balance of international obligations of a pecuniary character. All that Englishmen receive abroad has to be reckoned as a part of England's imports.

Finally, comment on the important class of intangible services is called for. These are not recorded in a country's returns of imports and exports, but they have to be paid for

nevertheless. They consist in the carrying services performed by one country for another, for instance, by an English vessel in trade between Spain and America, and also in agency and financial work. For these two classes of services England receives enormous sums annually. Their value is a part of her real exports since they are actual services provided for other countries, though they do not appear in her recorded exports. In discharge of them, however, there does appear on the other side of the account a large volume of tangible imports.

Imports and exports which do not figure in trade statistics are known as "invisible," but though overlooked by the official eye they are as real in value as the most ponderable things. Enough has now been said to demonstrate that, in the sense in which it has been used, the statement that exports pay for imports is correct. Finally, it may be added that the omitted cost of transport of imported goods can be attached to their value to make our theory exhaustive of the facts.

Ordinarily there are gains accruing from international trade which are undoubted and considerable. Through foreign trade a country

may get what it could never procure otherwise. Disraeli wrote in 1844 :—" Every one at a French dinner is served on a cold plate. The reason of a custom, or rather a necessity, which one would think a nation so celebrated for their gastronomical taste would recoil from, is really, it is believed, that the ordinary French porcelain is so very inferior, that it cannot endure the preparatory heat for dinner. The common white pottery, for example, which is in general use, and always found at the cafés, will not bear vicinage to a brisk kitchen fire for half an hour. Now, if we only had that treaty of commerce with France, which has been so often on the point of completion, the fabrics of our unrivalled potteries, in exchange for their capital wines, would be found throughout France. The dinners of both nations would be improved ; the English would gain a delightful beverage, and the French for the first time in their lives would dine off hot plates. An unanswerable instance of the advantages of commercial reciprocity ! " More extreme examples of a gain of this sort are to be found in the natural products, foreign to its own climes, which a country imports. England would have to go without tea, coffee, spices, cotton, bananas, and scores of other

things if all foreign trade were effectively interdicted.

In addition a country usually reaps a benefit out of foreign commerce in that it gets cheaper things of which it would not be entirely deprived were foreign trade suppressed. Generally speaking all exchanging, whether intra-national or international, results in advantage. People produce what they do not want in order to exchange it for what they do want, when that happens to be the most economical way of attaining gratification.

But conceivably people may now and then be driven by competition into a course of action, involving foreign commerce, which eventuates in a less economical way of satisfying their wants. They may, for instance, be induced to divert some labour and capital from an industry subject to increasing returns with a view to enlarging the output from an industry subject to decreasing returns; so that on the whole they lose in the long run without knowing it, though gains were reaped by traders at each step of the exchange. It is theoretically conceivable, indeed, that both national parties to the exchange might lose. These peculiar phenomena are of little or no importance practically, but from the point of

view of theory they must be admitted. They are special cases of the general exception to the doctrine of maximum satisfaction, to which Dr. Marshall has drawn attention. The doctrine of maximum satisfaction, according to one interpretation of it, laid it down that under competition labour and capital tend to be devoted to their most profitable uses ; but Dr. Marshall has pointed out that this generalisation does not invariably hold, since, for example, consumers' surplus could be increased by diverting some demand from things produced according to decreasing returns and concentrating it instead on things of which the production was subject to increasing returns. The explanation of this curious conclusion, which, of course, only holds when other things are equal, is that under competition the individual acts for himself and consequently leaves out of his calculations that the price of some things would fall when they were consumed less while the price of other things would fall when they were consumed more. I might know this as a fact, but I should not be disposed to act accordingly, because what I alone did would have very little effect and there would be no reason to suppose that others would follow my example if I acted

in the public interest against my own interest.

Just as the advantages of home exchange and their distribution are measurable theoretically through the agency of consumers' surplus, so are the advantages of international trade and their distribution. This may be said to indicate one of the many uses of the doctrine of consumers' surplus, which, though it may be of speculative value only at the present time, may eventually be turned to practical account.

Economics relates in the main to man's attitude to the purchasable goods of the world, and therefore it is imperative to remind ourselves from time to time that all the goods of this world are not of such a kind. Indeed, it is the impalpable subjective things in life, without a price, which give to exchangeable goods their value. We cannot value books without culture, nor pictures without taste. In this chapter, then, some notice should be taken of the advantages of international trade which cannot be, or are not, expressed in pounds, shillings, and pence. As regards these we cannot do better than read Mill in one of his most eloquent passages, which will incidentally make it evident that his political economy was not, throughout at any rate, of

that stony kind from which public sentiment recoiled :—"The economical advantages of commerce are surpassed in importance by those of its effects, which are intellectual and moral. It is hardly possible to over-rate the value, in the present low state of human improvement, of placing human beings in contact with persons dissimilar to themselves, and with modes of thought and action unlike those with which they are familiar. Commerce is now what war once was, the principal source of this contact. Commercial adventurers from more civilized countries have generally been the first civilizers of barbarians. And commerce is the purpose of the far greater part of the communication which takes place between civilized nations. Such communication has always been, and is peculiarly in the present age, one of the primary sources of progress. To human beings, who, as hitherto educated, can scarcely cultivate even a good quality without running it into a fault, it is indispensable to be perpetually comparing their own notions and customs with the experience and example of persons in different circumstances from themselves; and there is no nation which does not need to borrow from others, not merely particular arts or practices, but essential points of character in which its

own type is inferior. Finally, commerce first taught nations to see with good-will the wealth and prosperity of one another. Before, the patriot, unless sufficiently advanced in culture to feel the world his country, wished all countries weak, poor, and ill-governed, but his own; he now sees in their wealth and progress a direct source of wealth and progress to his own country. It is commerce which is rapidly rendering war obsolete, by strengthening and multiplying interests which are in natural opposition to it. And it may be said without exaggeration, that the great extent and rapid increase of international trade, in being the principal guarantee of the peace of the world, is the great permanent security for the uninterrupted progress of the ideas, the institutions, and the character of the human race."

How far, if at all, in certain circumstances the regulation or restriction of foreign trade is to be recommended in the interest of national wealth or health, is a question which raises issues too vast for discussion in this book.

CHAPTER VII

WAGES, PROFITS AND INTEREST

THE economics of distribution explains the sharing out of the wealth produced by a community. We may think of the various individuals in a community as working together with suitable appliances to make the incomes upon which they live. The generalisations relating to their activities, when they are thus engaged, constitute the economics of production. What is produced is called the national dividend or the national income. Generalisations relating to the processes whereby the national income is divided up constitute the economics of distribution. Only it is important to observe that the processes of production and distribution go on continuously. We all know that it is not a fact that production for a common stock continues for a time and then ceases while the division of the stock is being arranged. The process of its division is continuous with the process of its production. What exactly is implied by this statement we shall realise more fully as we advance.

A brief study of distribution will disclose a fundamental identity of theory underlying the determination of wages, and the determination of interest, profits, and so forth: though, of course, in detail there are many differences between these several determinations arising out of the diverse natures of the various factors engaged in production. It will be my first object so to expound the theory of distribution as a whole as to bring out the identity of theory. In order to do this it will be requisite to make certain assumptions. The first thing assumed will be that all production is group production: and as a matter of fact under modern conditions in the Western world most production is group production. Group production means, it will be remembered, that the individual does not produce independently but in conjunction with a number of other individuals and other productive agents. The second assumption is that each member of each class of factors is equal in efficiency; in other words that there is nothing to choose between the various members of any class of factors. All the employers in an industry, we suppose, are equally clever, alert and diligent; all the workmen, we suppose, are equal in respect of their physical and mental powers, and are

equally willing and manageable ; and likewise between the inanimate agents we imagine there is nothing to choose. This broad assumption, which for the purposes of argument removes the private properties of things of the same order does violence to the facts, but later we shall dispense with it and introduce into our doctrine the alterations which will then be requisite.

We shall suppose provisionally that in a given community there are a fixed number of employers and a fixed number of labourers. Each employer, producing under the guidance of demand, will aim at working with so much capital and so much labour that he maximises his profit. Now the first point to settle is this : How will the employer who is trying to maximise his profit be governed in regulating the relative supplies of work-people, material and plant in his business ? The answer is not far to seek. Brief reflection should render it broadly evident that the employer will engage so much of each class of producing power that no increase of it, in view of the price which he has to pay for it, will mean a greater loss than gain, other things being equal. Thus let us write L. for labour, C. for capital and M. for the remainder of the agents in production, namely the site of

the works and the material used, or, if it is a case of farming, the quantity of land embraced by the farm. Imagine that an employer has a business which can be represented by 100 L. + 200 C. + 50 M. Imagine moreover that the product is worth £500 a week, and that the following combinations produce the amounts stated :—

Agents in production.	Product per week.	Increase of product.
100 L. + 200 C. + 50 M.	£500	
101 L. + 200 C. + 50 M.	£502 3s.	£2 3s.
102 L. + 200 C. + 50 M.	£504 4s.	£2 1s.
103 L. + 200 C. + 50 M.	£506 4s.	£2 0s.
104 L. + 200 C. + 50 M.	£508 2s.	£1 18s.

Then the employer would try to increase his labour to 102 men at least, and would not increase it to more than 103, if wages were £2 a week, because up to 102 the gain in product exceeds the wage of the extra man, but beyond 103 it is less than the wage of the extra man; and obviously the employer would act similarly with reference to capital and other agents in production, considering what would be the effects on his net takings of increasing or reducing each of them. Finally he would reach an arrangement of such a kind that the marginal worth of each class of factors in his

business equalled what he had to pay for it. In short in organising his business he would act according to the law of equi-marginal returns which is fully expounded in Chapter II.

In the above example the nature of the demand for one of the agents in production is made fully explicit. Let us next consider how demand works in relation to supply, still concentrating our attention on the reward of labour. Suppose that this happens to have settled at £2 a week as a result of the forces previously operative and that each employer has 101 workpeople, when all workpeople are employed, though the marginal worth of labour to each of them is £2 3s. a week, as stated in the table. Then each employer will strive to get more labour because to succeed in getting it would be to augment his profit. But *ex hypothesi* there is no more labour to be had: we imagined that all the labour was occupied when each employer had 101 hands. The effect of the employers' action, therefore, cannot be to enlarge their businesses but will probably be to lever up the rate of wages until it approximates roughly to £2 3s. a week. Exactly the same can be said with reference to the payment for other factors.

It must be firmly grasped that any class of employed agents in production has a marginal worth which varies, other things being equal, with its supply: the larger the supply, in relation to given supplies of other factors, the lower the marginal worth. It is these marginal worths, or their equivalents, which tend to accrue to the agents in production as their earnings; and it is vital to an understanding of the economic functioning of a community to recognise that in these payments the value of the things produced is expressed. Workpeople have a value to the employer because, in conjunction with other agents, they create what has a direct or indirect value to consumers. Their value to the employer is in effect the value of what is made transmitted through the demand of the employer; and the value of what is made may actually originate in themselves, because it may be settled on the one side by their own demand for goods. Similarly the value of every other agent in production is the transmitted value of what it adds to production at the margin.

So we may lay it down in the rough that, subject to reservations arising out of social friction, the sum which each agent in production (apart from the employer, whose case

we shall consider shortly) gets as its pay is its marginal worth in production.

This statement is sometimes expressed in another and more complicated form, which comes, however, to the same thing in substance. It is said, for instance with reference to labour, that wages must equal the discounted worth of the expectation of its marginal product. Strictly speaking the element of anticipation must be introduced, as it is here, because the work must be done before its result is attained, and wages are usually arranged prior to the performance of the work. And so also must the notion of discounting be introduced, in order to meet the case, which is a common one, in which the saleable product is not obtained until long after the labour has been paid for. Suppose that the addition of another labourer to a farmer's staff, other things remaining unchanged, is expected to raise his harvest by 100 bushels of wheat a year, that the wheat is expected to be worth 10s. a bushel and that the labourer works and is paid for fifty weeks in the year. Then the labourer would not get £1 a week (that is £50 a year, which is the expected value of his marginal product) because the product is not obtained until twelve months after his work begins; but he would tend to get such an

amount per week that the payments made to him, plus interest upon them calculated up to the time when the harvest was sold, amounted to £50, or, in other words, he would receive the discounted value of his expected marginal worth, an allowance being made for the element of uncertainty as regards what his marginal worth would turn out to be.

This doctrine comes to the same thing as the one previously laid down, provided that in our first enunciation we meant by marginal worth the anticipated worth, at the time when he was paid, of the result of the wage-earner's work, in calculating which discount would have a place.

Up to this point we have been disentangling the influences on the side of demand which help to fix the remuneration for employed factors in production. We have next to pick out the equally important influences which are active on the side of supply. These latter influences, we shall observe, are not the same for all factors. Let us take land to begin with. A comparatively fixed supply of land has been provided by nature for all time. For purposes of exposition let us picture the conditions on a small island, which has no intercourse with the rest of the world, and

provisionally assume that all the land is equally valuable in respect of fertility and situation.

If the population is so dense that the whole of the land is in use, the land will have a marginal worth per acre equal to the difference that would be made to the product by the removal of one acre. If, however, the population is such that the whole of the land is not occupied, land will have no marginal worth, because, like air, there is more than enough of it. It is premised, of course, that the land is not monopolised. When land is not monopolised, its value is governed by the marginal worth of different quantities of land in relation to what the fixed supply is.

The supply of labour will engage our attention next. Here we discover more complex conditions. The size of the population is certainly dependent in some degree upon earnings—other things being equal it may not infrequently happen that population rises as earnings rise—but the laws of population are so obscure that all sweeping and dogmatic pronouncements must be viewed with suspicion. What is perfectly certain, however, is that the relative wages paid in many or most trades settle the supply of labour offered in those trades. Were the wages of carpenters to rise, other wages remaining

the same, there would soon be an increase in the proportion of the people engaged in carpentering. Nevertheless the inference would be quite invalid that when wages are higher in one calling than in another larger supplies of labour will be forthcoming for the former than for the latter. It may very well be that the higher wages in the one calling are necessary to overcome adverse influences which deter labour from entering it. The work may be very laborious, or very monotonous, or exceptionally unpleasant or unhealthy; or it may be irregular, or entail lengthy and expensive training; or the chance of failing in the calling may be unusually high. All that can be affirmed is that, when full allowance is made for these incidents, an increased supply of labour for a particular avocation can only be enticed by the offer of a more generous recompense. Neither must we conclude that, apart from payment to counteract these deterring influences, the levels of wages will actually incline in the long run to be the same throughout a community. They would, were it a fact that any one workman was as valuable as any other, and that the taste of any one workman with reference to different sorts of work was the same as that of any other. These conditions are not, however, found in

the world as it is. Consequently wages in some trades would be poor in comparison with those in other trades, even if labour could move with ease from place to place and trade to trade. Moreover, for the performance of a particular kind of work which was agreeable rather than disagreeable comparatively rare qualities might be requisite, so that substantial remuneration would have to be paid for it.

Our general conclusion is that wages in a given trade are settled by the marginal worth of labour in that trade and the supply price for labour in the trade, that is the wage at which an additional labourer will be forthcoming. The wage is the amount at which equal quantities of labour will be demanded and supplied. It is marginal incidents, we see, which clinch the bargain. It may be, however, that the lowest class of labour has no supply price—that its numbers are independent of its wages given sufficient for subsistence—in which case its wages are settled finally by its numbers in relation to the marginal worth associated with them.

We now arrive at the conditions of the supply of capital. Capital we must be content to regard for the present as wealth devoted to production. Few, if any, industries can be carried on to-day without it. The demand

for capital in production, as we have discerned, measures the marginal worth of different quantities of capital in production; and, in order to reach the complete demand of a community for capital, we have to add to the demand for production what may be called the demand for consumption. The demand for consumption is measured by the value to individuals of accessions to their present supplies of wealth when they have tangible expectations to pledge as security for loans. The supply of capital is governed by the power to save and inducements to save. Wealth may be saved for a variety of reasons. People may practise thrift merely for the sake of obtaining interest; but all saving is not to be ascribed to a desire to earn interest. Some persons are saving with a view to having at their disposal a fund through the agency of which they may seize any opportunities that offer for the advancement of their worldly interests; and all persons, except the most improvident, set by something against sickness, accident or other misfortune, or in order to enable them to meet without excessive strain future obligations. Much of the provision for the purposes last enumerated is effected through insurance companies. Further the accumulations automatically made by those

who, with their existing tastes, cannot reconcile to themselves the full spending of their incomes, must not be overlooked.

Evidently there would be a certain amount of capital available in a community even if no interest were paid, since some saving is independent of the incentive of gain. Indeed some capital would exist were interest negative; for instance if, instead of interest being paid, the possession of capital were taxed. This would be so because, the discouragement to providence notwithstanding, no prudent man would dream of instantly spending to the last farthing everything as he earned it. Despite these considerations, however, it is pretty certain that in every Western community a rise in the rate of interest swells the sums annually withheld from expenditure on consumers' goods. The rate of saving for some purposes is left untouched by an advance in the rate of interest; saving for other purposes, for instance the procuring of a fixed income to retire on, is checked; but saving with yet other objects in view is stimulated, and the influence determining this saving would almost certainly prove much stronger than the influence determining the second class of saving.

So capital, we may declare, has a supply

price; and this supply price measures the inducements in the form of interest necessary to bring about additional increments of saving. It is this supply price which, in conjunction with the demand that measures the marginal worth of different quantities of capital, decrees the net rate of interest payable at any time. Again we observe how it is marginal incidents that directly move the economic world,

In the last sentence I have introduced for the first time the phrase "net interest." Previously I have spoken simply of interest but I have meant by it net interest. At this point it is necessary to distinguish between net interest and gross interest. The latter is the interest which is actually paid. The former is the part of the payment which is simply remuneration for saving. Gross interest includes, in addition to this, charges which are of the nature of insurance against risk, recompense for the inconveniences of certain investments and for any work entailed on the part of the investor. Hazards are greater in some industries or businesses than in others; and the former, therefore, must offer a higher rate of interest than the latter in order to attract capital. In certain undertakings capital is either locked up for lengthy periods

or is not recoverable at short notice without loss. Here we have examples of inconvenience, for which the investor requires compensation. A good example of the gross interest which includes substantial payment for work done is to be found in the charges made by pawn-brokers, who are bound to give unremitting attention to the employment of a comparatively small capital since it is loaned in small sums for short periods.

In connection with interest there is one inquiry which must not be shirked, and that is why in a wealthy community the rate of net interest never drops to zero. It would if there were so much capital that its marginal worth subsided to zero. Why should it not? Why should the amount saved always fall short of the full requirements of the community? Looking at the matter broadly, in a rich country like England, one might be inclined to expect the rate of interest to subside till it touched the boundary where plus and minus meet.

Zero interest simply implies that the community regarded as a whole is employing the most productive methods—the methods which yield the highest net income. It means that the population is so distributed, winning coal and ore, smelting metal, making machines,

using machines and tilling the ground, and so forth, that the real income of the community is maximised. When we say that the marginal utility of capital is a certain amount—which means that interest must be that amount—we mean that the employment of another increment of capital (*i.e.*, the employment of a little more labour in making machines and so forth) would raise the net income of the community by that amount. That is to say, there will be a net gain from employing more capital so long as the marginal utility of capital is above zero. Why, then, is not capital applied to production until interest drops to zero? The answer cannot be given in a single sentence. In the first place, sacrifice must be made in the form of deferment of consumption, or saving, some time before the reward is reaped, and the share of this sacrifice which fell to the poorer classes might be quite beyond their saving powers. Robinson Crusoe could not have made all at once every kind of instrumental capital that he needed. He had to calculate the time he could spare from rest, recreation and the work which was more immediately productive of what he wanted to live. In the second place, the providence of many people is

undeveloped ; and, in the third place, capital is exported from rich countries to poor countries so that, in consequence, the rate of interest in the rich countries is kept up. As regards this last point, the warning will not be out of place that we must not jump to the conclusion that the prohibition of the export of capital would necessarily be beneficial—or the reverse—to the non-capitalists in a rich country. Were the exportation of capital prohibited, much of the capital which would otherwise have been exported would not have been saved ; and the exported capital makes cheaper the goods imported into the country. For instance, English capital which goes to Canada helps to furnish us with cheaper bread.

The key-stone in the theory of distribution is left to discuss, that is the manner in which the remuneration of the employer is governed. His remuneration is sometimes spoken of as profit, but “profit” is an equivocal term which is sometimes employed to indicate gross interest, and sometimes to indicate what the employer makes in his business, whether his earnings are of the nature of interest or of reward for the work that he does. In order to avoid ambiguity,

it would be as well not to apply the term "profit" to the payment of the employer for his positive activities in undertaking and organising production, apart from his gains as a capitalist; but unfortunately there is no suitable short term to indicate what we have in mind.

The appearance of a theory of payment for employing was comparatively late in the history of political economy; the reason being, no doubt, that early employers were largely working with their own capital, and that their earnings were commonly reckoned as a percentage on their capital. In the economic writings of past generations we invariably find more or less confusion between payment for capital and payment for employing.

In order to make sure of avoiding the pitfalls into which some economists have fallen, we shall take the seemingly eccentric course of arguing on the false assumption that every employer is working entirely with borrowed means; in which case all that he received would be on account of the work that he did, including his enterprise. We shall also continue provisionally to make the assumption that all employers are equal in capacity, application and character generally. Now imagine, to begin with, that in a

given industry there is a fixed number of employers. As they are equally efficient and enjoy alike the confidence of capitalists, they will have businesses of about the same size, employing the same number of work-people—any difference of ideas which the employers might have in the matter of the proportions in which the factors in production are best organized being disregarded for the moment. Then each employer would get for himself the difference between the total receipts for his output and his total outlay, the total outlay being made up of the payment for land or premises, cost of any necessary material and accessories, interest on capital and wages for labour. It has to be proved that this difference will normally be a positive quantity; that after all expenses of production are paid there will be something left over.

That something may be left over can be demonstrated from what we have learnt already in Chapter III. Let us picture to ourselves the doings of an employer who, after starting a business on a very small scale, gradually expands it, and consider, in the light of the generalisations already laid down with reference to production, how expenses will be affected by an increase of the output. Because in the larger business more division

of labour could be introduced and larger recourse could be had to machinery, the additions made to expenses would at first fall as additions were made to the output. But after a time additions made to expenses would begin to rise because, when the business had reached a certain size, the slackening of the employer's control, consequent upon the extension of the activities over which he had to exercise supervision, would counteract the possibilities of economy by way of specialising and the larger use of machinery. And, from that point onward, additions made to expenses would steadily rise. Our imaginary employer would allow his business to grow until the final addition made to expenses was equal to the price which he received for the product, that is until his marginal expenses equalled price. Let the following be the facts in the neighbourhood of the position of equilibrium:—

Output of the business in tons per year.	Aggregate cost of output.			Marginal cost.		
	£	s.	d.	£	s.	d.
1,000	11,490	0	0			
1,001	11,502	0	0	12	0	0
1,002	11,514	1	0	12	1	0
1,003	11,526	4	0	12	3	0
1,004	11,538	9	0	12	5	0
1,005	11,550	15	0	12	6	0

If the price of the output is £12 5s. 0d. a ton the employer will aim at an output of 1,004 tons, and his remuneration will be 1,004 times £12 5s. 0d. (which amounts to £12,299) less £11,508 9s. 0d., that is exactly £760 11s. Such close accuracy of balance is, of course, impossible, but the example serves to illustrate the principle which is roughly borne out in practice. We are overlooking the ups and downs of trade, which make employers' earnings fluctuate enormously, and considering merely what happens on an average.

We may now return to the main thread of our argument. Suppose there are 100 employers in the industry which is the sole industry in the country, and that the surplus left over for each employer is £1000 a year. Now, when the number of employers is not fixed, as it is not in reality, it may be that £1000 a year is too much or too little to cause 100 suitable people to devote themselves to the task of undertaking businesses in that industry. Suppose, first, that it is too much. If it is too much other people will be induced to enter the industry and compete for labour and capital. Consequently, in the very long run, the magnitude of the typical business will contract, though at the same time the

output of the industry will increase, inasmuch as the same amount of labour and capital at least will be employed in the industry, while more effective use will be made of them in view of the larger number of employers. We must also allow for the fact that an alteration in the number of employers through its effect, for instance, on the specialism of businesses, might in itself render the industry more or less productive. A new position of equilibrium will eventually be reached at which the surplus left in each business for the employer is less. This movement will continue until the surplus remaining for employers is just sufficient to induce the continued functioning in the industry of as many employers as there are.

Were the surplus too small instead of too large, some employers would be working at a rate of pay at which it was not worth their while to continue working. Gradually, therefore, employers would begin to desert the industry, and no others would take their place, since it has been supposed that the earnings are insufficient to attract any fresh organising talent into the industry. Consequently, for reasons already explained, businesses would expand in size, and the surplus left for employers would become

greater. This movement, as the one previously dealt with, would continue until the earnings of employers were just sufficient to maintain the supply under the new conditions.

In other words, the payment of employers for the work that they do is governed on the one side by the surpluses over expenses of production when businesses are of different sizes, and on the other side by the incomes at which different numbers of employers will be forthcoming. So we may say that the earnings of employers are settled by demand and supply. The surpluses just mentioned express the demand, and supply means the supplies of organising power forthcoming when different incomes are to be expected. The importance of marginal effects in this theory is apparent.

It will be understood that the earnings of employers for the work that they do can only be regarded as approximating to a defined limit in an exaggerated long run, a long run which is much longer than the time required to bring interest or wages to their normal levels. The reason is that an industrial business is an economic organism of very slow growth, and that once a business has been established, unless it is worked at a positive loss apart from payments to cover the

cost of its plant, it will naturally be continued until its plant wears out. Moreover, in many industries the individual business can only be enlarged with difficulty. As we have already learnt, restrictions which endure for a lengthy period may be imposed upon its expansion. An employer might find himself in a position in which, if he had to lay plant down anew, it would pay him to provide for a business ten per cent. larger than the one which he already directed; but it might not pay him to make his existing business ten per cent. larger, for an extension of his premises and an increase of his engines and boilers might only be attainable, in view of all circumstances, at excessive cost. There are industries, of course, such as building and farming, where these particular restrictions are experienced less, if at all.

In the whole of this exposition we have imagined for the sake of simplicity that every business is managed by a single employer who is its owner. This supposition, the reader will be fully aware, does not correspond with fact. Many businesses are organised as public companies and function under the control of a Board of Directors and a salaried manager, while other businesses are co-operative in form. Nevertheless, the

general principle of our demonstration may be taken to apply to these other types of business organisation which differ from the simple one which has been posited to simplify analysis. Our final generalisation would have to be modified to suit the peculiarities of these other types of organisation; but in general it may be said, with regard to the theory of payment for employing, that the only difference which is brought into the problem by the recognition of actual employing arrangements consists in the fact that the employing function is split up and divided among a number of people, instead of being concentrated in a single individual. Incidentally it may be remarked that the appearance of the company form of organisation has been productive of the most far-reaching and, on the whole, beneficial consequences. It is true that it has had—though it need not have had—the disadvantage of severing the personal ties between employer and employed, which afforded some guarantee that business relations would not be de-humanised and degraded into a mere cash nexus; but, on the other hand, it has enabled enterprising and able men possessed of small means to devote their most valuable capacities to the service of the community

by entering the ranks of those who exercise the employing function. Moreover, in consequence of the greater safety assured to the capital of investors when a business is clothed in the legal company forms, it has drawn increasing proportions of the savings of the community into the industrial field, and induced a higher degree of saving than would have taken place otherwise.

To say that the earnings of employers are settled by demand and supply is not to demonstrate that it is open to everybody who is prepared to undertake the burden, and is capable of doing the work, to make the employer's income. It is still necessary in almost all circumstances, that a person should be possessed of some substantial resources if he is to thrust himself into the employing class. Moreover, it is generally requisite that he should have received a certain kind of training, and be in certain relations with particular sections of the business world, to enable him to make a start with fair prospects of success. Consequently, to all but the most exceptional of those who are born in the lower economic ranks, the scaling of the industrial ladder is hard in the absence of unusually good fortune. It

may be trusted, however, that with improved popular education and general social and economic development greater opportunities will be afforded the ablest and most enterprising.

CHAPTER VIII

RENT

IN economics the term "rent" is not used with its ordinary significance. Ordinarily it means the annual payment made for land or buildings. It therefore stands for a hiring charge: but it is not applied to every hiring charge. If a person hired a brougham he would no more call the charge for it a rent than he would call the rent of his house a hiring charge. This common usage of the term "rent" has been determined solely by convention. Economists began with it, but after economic inquiry became more scientific, and the causes of payments began to be investigated, the application of the word "rent" in economics suffered restriction. In this study, it was made to refer only to annual or other periodic payments for land, apart from payments for things produced by labour and capital such as houses and farm buildings. The split between common usage and economic usage

was regrettable; but inevitable because it was discovered that the law determining the annual value of buildings, fences, gates, and artificial drainage systems, was no different fundamentally from the law determining the prices of other things freely produced. It scarcely need be remarked—but perhaps attention should be called to the point incidentally—that every value can theoretically be expressed as a total in a price, or as an income in terms of periodic payments. A price can easily be transformed into an annual payment and an annual payment into a purchase price. The only matter to settle is the number of years' purchase which should be allowed in effecting the transformation; and the number of years' purchase is deducible from the durability of the thing in question and the ruling rate of interest. In order to distinguish rent in the restricted economic sense just described from rent in the ordinary sense, the former was occasionally spoken of as "economic rent" or "rent of land."

The violence done to the implication of "rent" did not stop with the rejection of all payments for the improvement of land. Recent years have seen also an extension of the term's denotation to make it include

payments which neither the early economists nor the general public would have dreamt of regarding as rent. Nevertheless, the inclusion of these other payments is strictly as logical as the exclusion of certain payments had been. It was necessitated by the new discoveries made in the course of the more careful modern analysis of value. The alternative was to introduce an entirely new symbol to indicate these other payments together with what early economists understood by economic rent; but inasmuch as the symbol "rent" qualified by the epithet "economic," had already become embedded in the phraseology of economic science, and the distinction between economic rent and rent in the ordinary sense was clearly recognised, it seemed most convenient not to discard the old word, but to broaden its application. The retention of the old word absolutely necessitated a broadening of its application, because it was found that the law which governed payments for land governed also payments for certain other things. One could not speak of a law of rent unless one was prepared to designate these other payments as rent. What exactly these other payments are, we shall learn in due course.

But I have been rash, I fear, in using the word "exactly" in the last sentence. When we come to ask what "rent" really does mean in modern economics we very soon find ourselves in a mighty maze, not without a plan, but conforming to two or three overlapping plans. The best way to envisage it, for the purposes of such a study as is attempted in this book, is to rely on one plan, or at most two, and ignore the rest.

To the two meanings of rent which will be noticed all that has been written in the paragraph above applies. The one meaning is payment for any things (or frequently it is limited to agents in production) of which the supplies are beyond human control. The other is payment for the differential advantages between members of any class of such things, when differential advantages are understood to refer to the valuable properties inherent in things over and above those which are common to the class to which they belong, whether the differential advantages relate to land, persons or circumstances. Nothing much turns on the selection of the one idea or the other. To get rent in the first sense, we have simply to add on to rent in the second sense (which there is a certain convenience sometimes in calling "differential rent")

what would be the payment for the marginal thing of the class (which, to distinguish it from "differential rent," can be called a "scarcity rent"). Of course, in a sense so-called scarcity rent is a payment for differential advantages, since persons who possess a rare thing enjoy differential advantages over those who have not got it and cannot get it. But in what follows, for the sake of convenience of terminology, I shall use "differential advantage" with the meaning intended when differential rent is distinguished from scarcity rent.

At first, so as to limit the data to which attention must be given, we shall deal merely with the economic rent of land. We shall make a start with the simplest conditions conceivable. Let us imagine that the same amount of capital and labour is applied in cultivating any one acre of land in use in a country as any other. The fertility of a plot of ground has no influence over the degree of its cultivation, we premise; and we assume, further, that the situation of a farm is a thing of no importance, and that consequently, in the matter of the choice of land, it is fertility alone that counts. Coming next to detail, let us suppose that the

soil in our scientific wonderland is of four different qualities, viz., A, B, C, and D, and that A produce 60 bushels an acre, and B, C, and D, 50, 35, and 15 bushels respectively. Under these conditions, were population very scanty, only a part of land A would be cultivated, and no land of a lower quality, since a sufficiency of food could be obtained without recourse to any inferior land. It goes without saying that, other things being equal, the best land would be occupied first, providing it was known to be the best. In these circumstances no rent, or no appreciable rent, would be paid for land, on the assumption that the whole of the land, or at any rate the whole of the best land, was not in the hands of a monopolist person or group. If it were in the hands of a monopolist, he could insist on some payment for its use, and possibly a high payment, inasmuch as people deprived of all fruits of the earth would be unable to get satisfactory sustenance. In the absence of monopoly, however, no appreciable rent would be possible, if we mean by rent a payment for land and nothing but land. The competition of the owners of plots still untouched, though equal in fertility to those already ministering to the wants of man, would prevent the owners of the

occupied plots from making any appreciable charge for them. In the absence of combination on the part of landowners, no landowner could exact a rent larger than that which would induce the possessor of vacant land to let it.

Next let us modify the premisses from which this result is deduced. Let population grow, and let it finally reach such a figure that the whole soil of quality A is absorbed in farms, and, in addition, recourse must be had to some of the soil of quality B. These conditions having appeared, the land of the higher quality will begin to bear a rent, and the rent will tend to amount to 10 bushels an acre, that is, the difference between the yield of the best land, 60 bushels an acre, and the yield of the second best, 50 bushels an acre. For the farm land endowed by nature in the lesser degree no payment can be effectively demanded, for reasons which have already been advanced to prove that in the circumstances first imagined no rent at all would be paid. Were the owners of inferior fields to insist on payment for their use, farmers would substitute for them land still unoccupied. But rent would be paid for land of higher fertility, because no land of this fertility remains unoccupied. Now, if other land is to be substi-

tuted for any of quality A, it must be at the best that of quality B; and, therefore, the inferior will have to be substituted for the superior. Such a substitution would not prove profitable until the rent of land A became something greater than what would be lost by evacuating some of A and occupying in its place some of B. Hence rent of land A can be no more than 10 bushels an acre. And, broadly speaking, it can be no less, because the competition of farmers for the better land would force up its annual value until the substitution of land B for land A (in view of the rent of land A) was a matter of indifference.

Let us now take a further step in the demonstration and suppose that the demand for the produce of the soil is such that some of land C must be occupied. Then eventually the rent of B would be 15 bushels, the difference between the yield of B, 50 bushels, and the yield of C, 35 bushels; and the rent of A would be 25 bushels per acre, the difference between its yield, 60 bushels, and the yield of C, 35 bushels. Finally when D, which bears 15 bushels an acre, is tilled, C with a produce of 35 bushels an acre will bear a rent of 20 bushels, that is 35 minus 15. B, with its output of 50 bushels an acre, will earn a rent of 35 bushels, that is 50 minus 15; and the rent of

A with its produce of 60 bushels will rise to 45, that is 60 minus 15, on the assumption that the whole of the lowest quality of land is not in use. The significance of this assumption will be brought out in due course.

We may pause to underscore what is outstanding in this reasoning, namely, that it is the operation of the law of substitution, or indifference, among competing persons which brings about the payment of rent in the circumstances supposed. Payments are made for land because effective tendencies to substitute what is lying idle for what is used, and what is cheap for what is dear, are at work. These effective tendencies at first create the rent, and then lever it up until it becomes such in amount that any further substitution is a matter of indifference. So we may affirm that the rent of land is the payment which equalises the earnings of cultivators of the same capacity, thus leaving them indisposed to substitute one piece of land for another.

In order to complete our theory in its first rough-hewn form it is necessary to consider what would happen if the whole of the land were absorbed and the population still grew. Let a state of affairs be given in which all the land is in use, but the worst only just in use,

so that the worst land bears no rent ; and let it be given also that the inhabitants of the country continue to multiply notwithstanding. In consequence of the latter circumstance, the demand for the fruits of the earth would rise, and, if payment for land did not rise proportionately at the same time and the worst land bear a rent corresponding to the increased value of its produce, all farmers would make profits over and above those earned by men of similar capacity in other callings, because presumably, prior to the rise in the price of food, the farming business was neither more nor less profitable than other businesses. The comparative fortunes to be made out of tilling the soil would attract into the farming industry larger numbers year by year ; which is to say that in a short time excessive competition to obtain land, the source of the abnormal profits, would appear. Under the pressure of this competition, the land at the bottom of the scale, as regards quality, would begin to bear a rent, and this rent would rise until the farming of that land was no more profitable than any other business, that is, until the substitution of farming for another trade would be a matter of indifference from the pecuniary point of view. And, just as and

when rents were created for land of quality D, the rents of fields of higher quality would advance, and the amounts by which they advanced would exactly equal the amount of the rent which had to be paid for D, on the assumption that the quantity of wheat obtainable from each kind of land is constant.

In the paragraph above I have spoken of any annual payment for land of quality D as a rent, but it is only correct to call it so if rent embraces every payment for land, however determined, which is not a recompense for any capital invested in it. Should we elect to confine the conception of rent to payments for the differential advantages possessed by the super-marginal things of a class, then the payment made for land of quality D is not a rent, because it is not a payment for such differential advantages. It is, on the contrary, a payment which expresses the marginal worth of land. Now land can only have a marginal worth when it is limited in quantity so that nobody can get as much of it as he likes. When the amount of land is unlimited with reference to the population, it is naturally used until its marginal worth becomes zero, just as air is, and water when the water can be obtained direct from nature and is not

conveyed along costly aqueducts. To be strictly logical, if we take the narrower view of rent, we ought to say that the marginal land earns its marginal worth (a scarcity price) and not rent, but that super-marginal land earns its marginal worth plus an extra sum (differential rent) which measures the differential advantages enjoyed by it, that is to say, a sum which would render the substitution of that land for marginal land a matter of indifference.

It goes without saying that the payment for land of a sum representing its marginal worth is a phenomenon foreign to our experience. Even under conditions of such a kind that a community is dependent for its food upon the produce of its own country, it will generally be found that there is some land of some quality, though it may be of a very low quality and very inconveniently located, which has not yet been brought under the plough or used for grazing. And when we come to modern conditions wherein all parts of the world are linked together by international trade, we find unlimited tracts of unoccupied land available for the production of the food supply of the future population. Hence it is readily comprehensible why it is that in economic writings

up to recent times the charge for land, apart from the charge for the capital sunk in it, has been represented as a payment merely for differential advantages. However, for the sake of perfection of theory, the possibility at the least of a charge based upon marginal worth must be admitted.

The differential advantages dealt with up to this point are those connected solely with fertility, but it is apparent that there are other differential advantages. So far as land is concerned, there are also advantages connected with its situation. When the rent of a plot of farm land is being calculated, both its fertility and its situation are taken into account, and the sum that must be paid for its hire is determined by the sum of the differential advantages which it enjoys in respect of the two taken together. When, however, a plot of ground is intended for a building site its fertility, naturally, does not enter into the settlement of its value; but of course the charge made for it must exceed the value of its differential advantages for farming purposes. What are known as situational advantages, it scarcely need be pointed out, comprise conveniences of quite different sorts. In one case the situational advantage may consist mainly in the low cost of trans-

port from the plot of land to the market. In another case it may represent the value of the time saved by the occupant of the site through his being in a favourable position with respect to the people with whom he is doing business. In another case it may be connected with water supply or harbourage; and in yet other cases it may represent the pleasantness of an environment, whether in climate, scenery or social amenities. It would be impossible to measure by an objective standard the quantity of intangible differential advantage, but in its actual measurement for practical purposes no difficulty is met with since the value of the differential advantage is automatically registered in the demands of consumers which express the degree of their preferences for different plots of land in view of the mixed advantages associated with each. Everybody is able to say how much he prefers one thing to another, though he may find it impossible to state why he prefers one thing to another.

In the foregoing discussion the broad aspects of the theory of rent in its application to land are tentatively blocked in; it now remains to shew where the theory, as so far set forth, is imperfect, and how it must be

finished off. For its completion we require a finer instrument than has been employed hitherto ; we must lay aside the palette knife and take up the brush. The reader will guess that by the finer instrument the marginal method is meant. Without the use of this method a complete and consistent doctrine of rent is unattainable. It is true that we have already had recourse again and again in this chapter to the term "marginal," but the reader will not have failed to observe that in every case marginal quality has been intended. The conception of marginal quality does not incorporate the fundamental idea of what is known as the marginal method.

It was posited at the outset of our demonstration that in farming every acre of land, whatever its quality and position with reference to the market, would have devoted to it the same amount of capital. Now this assumption, we all of us know, is a pure fiction. As a matter of fact the most fertile and the best situated land will be worked most intensively, and by being worked most intensively we mean that most labour and capital will be applied to its cultivation per acre. We have, then, to determine how much labour and capital will be devoted to each plot of

ground, and how exactly the amount of the surplus of produce (in value) over expenses is settled. There obviously cannot be a surplus on the marginal land, when any other available land remains uncultivated, if we include in the labour the work done in the way of direction by the farmer himself, because it is assumed that what is received for the produce when no rent is paid will be just sufficient adequately to remunerate the whole of the factors engaged in working the land. The surplus derived from the other lands will evidently be the outcome of their differential advantages, and this surplus consequently will be the rent.

In an attempt to settle these further points there is nothing to baffle those who have acquired deftness with the marginal method. Let us think of labour and capital as made up of doses of productive agents each of a given value. Thus let us mean by a dose of labour and capital 20s. spent to the best-known purpose on labour (including the farmer's work), machinery, seed and other farming necessities in the working of the land. One dose, of course, might stand for much labour and little instrumental capital, while another dose might stand for little labour and much of the other things required in agriculture. Now

we know, from what we have learnt of the law of decreasing returns, that sooner or later the addition made to the returns obtained from a field by adding to the doses of labour and capital devoted to its cultivation will become less and less. This being so, it is apparent that in the disposal of labour and capital the farmer will devote so much to each kind of land that the additions made to the returns of each kind of land, as a result of the application of the last dose of labour and capital, will be the same. In saying this we are merely saying that the law of substitution, indifference or equi-marginal returns, holds in production. The proof is identical with the proof already furnished of the proposition that people will tend so to spend their incomes that the marginal utilities derived from different lines of expenditure will be equal. The additions made to the returns of the fields are known technically as the marginal returns, as the reader knows.

Continuing our argument, we observe next that each farmer will go on applying doses of labour and capital to each tract of land each season until the marginal return, in view of the price of the produce, is just sufficient to afford normal remuneration for a dose of labour and capital. Normal pay-

ment for the agents in production other than land will, therefore, be obtained from the proceeds of a quantity of produce represented by the marginal returns multiplied by the number of doses applied. When there is a surplus produce (that is produce over and above this amount) its value is rent.

The point will have been seized already, no doubt, that, in order to bring in the element of situational convenience, the doses of labour and capital must be made to cover the cost of carrying the factors in production to the land and produce to the market. For the sake of simplicity we are leaving out specific mention of these costs, and for the same reason we are positing that the produce is all of one kind. It may be remarked, however, that when the produce is of many kinds we have a common denominator for its measurement in its value; and that the principle of substitution, which naturally settles how much of one kind of produce is produced and how much of another, will bring it about that the proportion of the different kinds of produce will be such that, in view of the price of each, the value of the total output of the land is maximised.

Let me illustrate our simplified case with figures relating to a given piece of land :—

Doses of labour and capital of £5 each.		Value of total returns at constant price.		Value of marginal returns.
1	..	£7	..	.. £7
2	..	£16	..	.. £9
3	..	£24	..	.. £8
4	..	£30	..	.. £6
5	..	£35	..	.. £5
6	..	£39	..	.. £4

Five doses will be applied, as the marginal return for five doses of £5 each is £5: the application of a sixth dose would cause loss. The total earnings of the farmer and his agents in production will be five times £5, or £25. The value of the aggregate return is £35. Hence the rent is £35 less £25, that is £10.

Two corollaries may be deduced from this demonstration. The one is that, other things being equal, the most favourably situated land will be worked the most intensively. The other is that more doses of labour and capital will be applied in making use of the more favourably situated building sites than in making use of the less favourably situated ones. In proof it is sufficient to point to the high and costly buildings in the centres of large towns.

My next purpose must be to indicate that the

theory of rent, which holds in this particular case, holds also of payments for differential advantages of quite another kind. The foregoing demonstration is in fact an exposition by the method of example of the general theory of rent when rent is understood as payment for differential advantages. It will be comprehended that the same forces come into play when human factors in production are being dealt with as well as when land is being dealt with. Just as there are differences in respect of fertility between different plots of land, so there are differences in respect of capacity, industry and quickness between different persons. Take the case of a particular industry, and, to make it a strong case, suppose that those who work in it must have special ability. Naturally it is impossible to obtain for the industry an unlimited supply of labour of the highest quality. Employers must have recourse to labour of lower qualities if the trade is to attain to any magnitude, just as farmers must have recourse to some land which is not of the best sort. The least efficient operative may be termed the marginal operative, just as the least valuable land may be termed the marginal land. Through the working of the principle of substitution it is plain that the

more efficient operatives will tend to get wages in excess of the wage obtained by the marginal man; and after the foregoing exposition it should be equally apparent that the extra wages will measure their differential advantages as agents in production, that is the differential advantages of employing them. They are properly termed rents, according to the modern use of the term, because they are payments for differential advantages.

It will be observed, moreover, that the complexities which were involved in the case of land considered above when we took into account the different amounts of labour and capital that would be applied to different qualities of land are involved also, to some extent, in the case of workmen. More doses of labour and capital will be applied, other things being equal, to the more efficient than to the less efficient workman, that is to say there will be a tendency to set the efficient workman to manage more machinery and generally to work with more assistance. However, this tendency is frequently counteracted by other tendencies, for instance by the disposition to secure the simplicity arising from uniformity of arrangement. Again, trade union regulations, imposed for reasons which cannot be discussed now, may prevent the

most capable operatives from getting the full value of their differential advantages; but it must not be taken for granted that such restraints are necessarily without beneficial results.

The personal rent enjoyed by an employer is naturally a more substantial quantity than any personal rent enjoyed by a workman. A very capable employer will ultimately have under his control a far greater quantity of agents in production than the marginal employer. Though the very capable employer with a small business might immensely magnify his earnings by enlarging it, the marginal employer would find that any attempt on his part to do the same would meet with loss instead of gain.

Whether regarded broadly or narrowly, the rent paid for a productive agent does not determine the price of the thing to the creation of which it is instrumental. In this sentence we have presented to us one of the most famous dogmas of economics. Not uncommonly it has been expressed thus: "rent does not enter into price." In this form, however, it invites misunderstanding. The rent of farm land and business premises must come out of the receipts made up of the prices of things, since

no other fund exists out of which it can be paid. But this is not denied. By "entering into price" is meant entering as a determining factor into price. That all rent which is incurred in connection with producing does not exert a direct influence on the prices of things—though, as we shall discern shortly, it may be involved indirectly in the settlement of price—can be deduced instantly from the theory of price already expounded. Take the case of wheat. From the supply side its price is fixed by the costs of the marginal producer on marginal land. Into these costs *ex hypothesi* differential rent does not enter; and though the farmer of marginal land would reckon any scarcity rent among his costs, its remission would not cause an increased supply of wheat (and so an alteration of price) because, were a scarcity rent ever to appear, there would be no more land to bring into cultivation. Another and more exact way of putting the proof is to apply the marginal method of analysis intensively and point out that price is settled by the cost of the marginal return (whether from marginal land or not) which should, in strict theory, be the same on every field, and that no kind of rent figures in this cost.

All farmers, though producing at different

costs per unit raised, get the same price per unit for their produce in the market, and this is the price which it is necessary to pay to cause the production of the wheat raised at the margin. Rents, instead of settling price, are caused, as we have seen, by the fact that when all farmers get the same price, some of them (or all of them under conditions which give rise to scarcity rent) would be left, in the absence of rent, with a handsome surplus over normal profits, and that competition for their farms compels them to surrender it to the landlord. High rents do not make high prices any more than the height of the barometer governs the state of the weather. On the contrary it is the high prices that make the high rents.

In qualification of this statement it must be added that a rent charge comes into play in settlement of price when the marginal land for a given purpose can only be obtained by buying out somebody who requires it for another purpose. The marginal factory in the outskirts of a town has had to win its site from agriculture in all probability, and to do so it has had to pay for the land a charge equal at least to its rentable value for agriculture. This charge, in being incurred at the margin, is an unavoidable element in marginal cost,

and therefore enters into the supply price of the article produced in the factory.

It will be realised, of course, that the dogma discussed above has no reference to the rents paid directly by consumers for their houses and grounds. It will be realised also, I imagine, without demonstration that the dogma holds not merely of land rent, but of every kind of rent so far as it is a payment arising out of the production of things.

CHAPTER IX

PROBLEMS OF DISTRIBUTION

It is now my intention to discuss some details and practical points connected with the abstract theory of distribution already set forth, but before doing so it will be as well to repeat in what the gist of this theory consists. Broadly put the modern doctrine of distribution affirms that payment for the employed agents in production is settled by the forces of demand and supply. The demand for a factor is supposed to measure the marginal worth of that factor to employers, in view of the existing supplies of other factors, while its supply forces mean the prices at which different quantities of that factor will be forthcoming. As regards the employer, his remuneration for the work that he does, apart from payment for his capital, is represented as what is left over after payment for the employed agents; and it is maintained that this amount, in the case of the employer of marginal capacity, tends to equal his supply

price. It is extremely important to observe that this theory in its bearing on employed factors does not declare that each agent gets what it makes, but merely that each agent gets the difference that it makes to the total output of a productive group which is organized to work as a whole. Finally, to complete the theory we have the doctrine of rent which accounts for payments made on behalf of agents which enjoy differential advantages.

It needs no specific intimation that in this theory it is marginal incidents that play the leading parts, just as it was marginal incidents which enabled us to comprehend fully the phenomena of price. Now, in relation to price, we observed that an incisive application of the marginal method on the side of demand brought out a novel feature known as consumer's surplus; and it remains to investigate whether a similar feature may not be revealed on the side of supply. It may be said at once that a similar feature will be found to exist. It is called producer's surplus.

Broadly put consumer's surplus stands for the difference between the value that a consumer gets from a thing and the value that he gives for it when he purchases it. Then, to be strictly analogous, producer's surplus should stand for the difference between the

value which a producer gets for his work (exclusive of the element of consumer's surplus) and what he sacrifices in doing it. Let us take the case of a workman. What he sacrifices is the disutility or dissatisfaction involved in working, which we must remember to interpret as experience which would not be chosen for itself, but to avoid which, on the contrary, the workman would be prepared to pay something. What he gets is first his wage and secondly any satisfaction obtained by him from the work itself. And there is little work in the world which from minute to minute, day in and day out, never stirs the sense of enjoyment. Generally speaking the beginning of the day's work goes against the grain; but soon our activities become pleasurable; and they continue pleasurable until weariness again causes disutility to predominate. Now in a land where labour is not in slavery the marginal utility of the wage multiplied by its amount is practically certain to exceed the disutility involved in work. This excess with any positive utility got from the activity of working is analogous to consumer's surplus and is called the workman's producer's surplus. It may also be defined as the net utility resulting from work, apart from consumer's surplus, when the utility of the wage is taken into

account. Evidently a producer's surplus is normally yielded by every kind of work.

What is the good of the conception? It furnishes us with a clear-cut notion of an important part of the national income of utility which we should otherwise be in danger of overlooking, and moreover provides us with a theoretical (which may become a practical) means of measuring it. It is imperative that in directing progress the influence of different courses of action on the real, though intangible, income represented by producer's surplus should not be lost sight of, as it is only too apt to be.

In this discussion we have come in touch with the problem of the hours of labour, as regards which it must now suffice to say that, in the settlement of the duration of the normal day's work, wages, the marginal dissatisfaction of working, the effect of different hours of labour on productivity and on the producer's surplus of the operative, and the utility of capital in relation to the proportion of time that it is idle, all play a part; but not all of them such a part as they ought to play. Having noted so much, we may pass on to the equally practical and urgent question of the bearing of an extensive use of capital on

wages and the general well-being of the wage-earning classes.

We may take it as commonly allowed in these days that the workers have generally benefited in income from the capitalisation of industry; but it is not always recognised how exactly the benefit has come about. The correct view of the relation between wages and capital is certainly this, that as capital increases wages must tend to rise. One might at first, perhaps, hesitate about subscribing to this doctrine, because one might feel disposed to contend that the introduction of more capital displaces labour—that is to say that satisfying the demand for productive agents with capital weakens the demand for labour, capital and labour being largely alternatives. Such an argument would be sound were it a fact that the quantity of things demanded, tangible and intangible, was absolutely fixed in amount. In that case, the advent of labour-saving appliances would throw men out of work, and the out-of-works, by competing with those left in employment, would bring down the rate of wages. But this effect could never be met with in the long run, because, when the price of a thing is reduced in consequence of an improvement in the method of making it, more of the thing is

wanted and more has to be produced, and because, were some labour left unoccupied nevertheless, this labour would be needed to produce other things (including leisure) which people had not been in a position to buy when they had been forced to pay so much for the thing that was afterwards cheapened. We may therefore conclude that, in consequence of the introduction of machinery, in the long run as much labour will be wanted as before, and will even be wanted more intensively (as will be argued later), despite the fact that some labour may occasionally lose work for a time and possibly suffer permanently through having been narrowly specialised to a task which machinery assumes.

The impossibility of there ever being insufficient work for a community normally becomes evident when we bear in mind that the demand for labour is simply a reflection of the community's demand for things which may be regarded as practically insatiable. So Mr. Midshipman Easy was uttering an outrageous fallacy when he gave expression in this way to the wisdom which he is supposed to have learnt in the Navy:—"The luxury, the pampered state, the idleness—if you please, the wickedness—of the rich, all contribute to the support, the comfort, and employment of

the poor. You may behold extravagance—it is a vice; but that very extravagance circulates money, and the vice of one contributes to the happiness of many. The only vice which is not redeemed by producing commensurate good, is avarice. If all were equal, there would be no arts, no manufactures, no industry, no employment. As it is, the inequality of the distribution of wealth may be compared to the heart, pouring forth the blood like a steam-engine through the human frame, the same blood returning from the extremities by the veins, to be again propelled, and keep up a healthy and vigorous circulation.” The fallacy betrays itself at once when we remind ourselves that we cannot be ultimately dependent for employment on other people’s wants, because we have all quite sufficient of our own to keep us fully occupied in satisfying them. Yet there are those to-day who follow the lead of Marryat’s hero along one line of thought and maintain that the excessive saving of the rich—which is sometimes represented as forced upon them because it is maintained that they simply cannot spend in proportion to what they get—is withholding employment from the poor. But saving which is not hoarding is indirect spending—spending on productive instruments which make things

cheaper for the poor—and transparently more can be produced for the poor when their demand has to compete to a less extent with rich people's demand for consumers' goods.

It has been counterclaimed above, as against the pessimists who dread lest wages should fall as more machinery is used, that the effect of using capital in production is to intensify the demand for labour, so that a bigger real wage will be paid when much capital is used than when little capital is used. The ground on which this counterclaim rests is that the productivity of labour is enhanced with every additional accession of suitable appliances: and labour is remunerated, if our theory is correct, in proportion to its productivity. The rate of interest may be very high, and the proportion of the national income absorbed by capitalists may be very large, but nevertheless the capital must have added to the national product under normal conditions a larger amount than is paid for it. Another way of proving this conclusion is to derive it from the doctrine of consumers' surplus; for capital as well as labour is paid only its marginal worth, and the initial returns to capital are very much higher than the later returns. Hence there is a

surplus, so to speak, which has been termed consumers' surplus; only in this case the surplus must accrue not to those who buy consumers' goods but to the direct consumers of the capital, namely, those who are active in producing in conjunction with the capital yielding the surplus.

The question naturally suggests itself at this point as to whether it is theoretically possible—apart from broad questions of justice and social policy—to secure the whole of the benefits resulting from the use of capital for the community at large, no share being left for capitalists. Evidently it would not be possible to bring about this result by the simple expedient of prohibiting the payment of interest, even if such a prohibition were not evaded. Were interest forcibly suppressed under the conditions now ruling, which naturally give birth to a market rate of interest, it is highly probable, to say the least, that the amount of capital saved would be substantially reduced, so that a loss would be occasioned to others than capitalists, as well as to capitalists, which might easily surpass in amount the saving effected for the former through the non-payment of interest.

Nevertheless it is conceivable, though most improbable, that circumstances might arise

which would naturally bring down the rate of interest to zero. Were a people exceedingly well-to-do so that their power to save was very great, and were they extremely provident so that their will to save was very great also, and were it a fact that such inventions had been made that machinery became more effective and less costly ; then it might be that the marginal worth of capital in industry would be zero for such a quantity of capital as would be saved without payment of interest, and our theory teaches that interest would be zero if the marginal worth of capital were zero. Maybe such theoretically imaginable circumstances are never likely to be met with in this world, as I have already maintained ; but it is remarkable that the net rate of interest should be as low as it is, despite the prodigious masses of capital which industry absorbs. This fact seems to indicate that the amount of saving which takes place in the country independently of the inducement of interest must be gigantic.

With the point proved to our satisfaction that we are all much the better off pecuniarily in consequence of the extensive use of capital, the whole of the social problem connected with the capitalising of industry has not

been solved. There remain for discussion the vital questions, first of what are the effects of the use of machinery upon labour directly apart from its wages (what, for instance, are the effects upon the workman's producer's surplus), and, secondly, of what are its effects upon the prospects of the more able and ambitious of the labour world. These questions it is for realistic economics to answer, but two thoughts may be suggested: the one that the influence of machinery on labour is elevating when the workman is no longer called upon to perform a mechanical task, and possibly a heavy task, but is required instead to apply knowledge and exercise intelligence in the management of power-driven appliances of a complicated nature; and the other that within the large business upward progression may be possible for the talented, while it may still be feasible to start employing, in many industries, in a small way which may not be beyond the reach of the pushing and thrifty workman under conditions of developed credit.

The beautiful theory of distribution expounded in the last few chapters works in the world as it is against enormous friction. It is not, therefore, surprising to find in all advanced countries associations of workmen

and employers, one of the objects of both of which is to regulate the sharing of wealth between capital and labour; and it becomes the less surprising when we allow that even if economic tendencies were not naturally retarded under competition it might conceivably pay certain people to retard them (as we have learnt in the chapter on Monopoly) or it might be thought that it would.

It seems likely, though it cannot be firmly established by a rigid logic, that trade unions have had a large effect on the level of earnings: and they have certainly influenced the position of the wage-earning classes in a variety of other ways, in improving their status, curtailing their hours of labour, and rendering the conditions of their work more agreeable. We shall now consider in some detail how wages can be controlled by trade union action, keeping our discussion throughout hand-in-hand with theory. In the first place, we shall suppose that the organisation of labour is accompanied neither by improvement nor deterioration in its efficiency.

It needs no proof that the strong organisation of a section of the labour world, in the absence of organisation on the part of other workpeople or in the presence of weaker organisation on the part of other workpeople,

can secure for the members of the strong trade union a larger remuneration than is enjoyed by people of equal capacity in other trades. By their strong organisation the parties in question place themselves in the position of monopolists; and the monopolist, whether he be selling labour or commodities, is able to get more than normal earnings, as we have already learnt. As a rule, however, it would be necessary for the monopolist trade union to restrict its membership, as it could not hope to place an indefinite number of people in employment at an abnormally high wage, and, if they were not debarred, multitudes of people would flock into the calling in which earnings became exceptionally high.

We may inquire next whether larger wages can be secured by the working classes through trade union effort on the assumption that all workpeople are combined with equal strength. They certainly can if it is a fact that social friction is strong and that social friction ordinarily works to the detriment of the wage-earner, as it is alleged that it does. Combination on the part of labour might at least be sufficient to counteract the effects of this social friction, so that wages rose more rapidly and higher on

demand increasing than they would have done otherwise. It is quite possible that the gain of the working classes through the resistance offered to social friction by trade union action may have been an amount well worth having. But could an all-round combination of labour raise wages on the assumption that there was previously no social friction, or, in other words, could trade union action do more (in the absence of any increase of efficiency on the part of labour) than counter-act social friction ?

To find the correct answer to this question requires more than a passing acquaintance with economic principles. We may argue the matter in this way. Wage earners, were they strong enough to hold out, and were they in a position to sell their labour in the lump, could immediately secure an appreciably higher wage. The higher wage would be won at the expense of employers' earnings and interest on industrial capital. Consequently, in the long run the amount of employing capacity devoted to industry would probably be reduced, and so also would the amount of capital devoted to industry. Now when industrial capital and the quantity of the employing factor acting in production were both diminished the sum of the national

product would be depleted. Whether, then, the workpeople would gain or lose in the long run would depend (assuming that these reactions would be met with) upon whether their larger share of the smaller product was greater than the smaller share of the larger product which they had previously received. Up to a certain point the former sum might conceivably be the greater; if it were, up to that point the concerted action supposed on the part of labour would have worked to their advantage. In going beyond any such point, however, they would lose, that is if they attempted to grasp a share of the national product in excess of a given amount which it is possible theoretically to define. Inanimate nature presents analogies: if a rhubarb bed is too greedily plucked one year its powers of recovery may be so weakened that it will never be the same again.

The reader must not close the book at this point and run away with the false and mischievous idea that an important practical conclusion has been deduced. For practical purposes our argument is as yet one-sided. It has now to be qualified. So far we have been dealing with a highly abstract case implying assumptions all of which could not possibly

be realized. It is supposed that workpeople are in a position to sell their labour in the lump, which is to say that they are so placed that they can prevent employers from dismissing any hands when wages rise. Now employers as a body would certainly be wishful to dismiss some hands when the trade unions had forced up wages in the manner supposed, because wages, which we imagined to have been equal previously to the marginal worth of labour, would have become greater than the marginal worth of labour. That the workpeople would get wages in excess of their marginal worth, if they got their way in the case put above, can easily be demonstrated. It has been premised that the quantities both of employing power and capital engaged in industry would be reduced. This being so, the marginal worth of labour would be bound to fall because its marginal worth varies directly as the quantity of the other factors in collaboration with which it is working; and though its marginal worth would fall in the circumstances considered, its wage has been supposed to rise. But according to the theory of wages, the employer will not pay labour more than its marginal worth: if an attempt is made to force him to do so he will turn off workpeople until he reaches the point

at which the man just left in employment has a worth equal to his wage.

It is very difficult to imagine how organised labour could secure the employment of all employable people, when such a breach between marginal worth and wages had been created, without interfering to such an extent with the arrangements in works that the employer as industrial organiser would in effect be displaced. In a limited degree, of course, the kind of interference with the demand for labour which we have in mind can be brought about by regulations relating, for example, to the quantity of labour to machinery (the wisdom or folly of which when their intention goes beyond stopping overwork, we shall not enter into here); but, in order to carry out on a large scale the sort of policy which we have been discussing, the interference with the demand for labour, instead of being limited and piecemeal, would have to be massive and thorough-going.

Paradoxical as it may appear, given a social system like that which we have now in general operation, a brighter future for labour is bound up, not with action which would reduce the proportion of employing capacity active in producing, but, on the contrary, with action which will augment

its potential supplies. Action of the latter kind must obviously aim at raising the vertical mobility of the population, as it may be put technically—at rendering it increasingly possible for talents to discover themselves and discover in addition suitable outlets. As things are the national product would rise if the relative number of those who function as organisers and sub-organisers increased; and their relative numbers would tend to increase were they picked from a wider field, so that the supply price for any given number of them would be reduced. Moreover, when organisers are picked from a wide field, the level of capacity among them may be expected to be higher than when they are picked from a narrow field. And, in addition, when forcible and continual competitive pressure is brought to bear upon the organising ranks from below, by new men who are attempting to force their way into the ranks of leadership, those who are already established are compelled to be zealous and alert. Of the enlarged product brought about by the vertical mobility of labour, a substantial portion must almost certainly be reaped by labour, because the marginal utility of labour tends to rise as the amount and efficiency of the attention devoted to its

arrangement and direction is magnified. It is, therefore, in the interest of labour—and of the community as a whole—to encourage vertical mobility. Of vertical mobility good general and specialised education is an indispensable condition; and such education is calculated to bear yet other fruit in the invention and discovery which advances the material interests of the human race.

In the above discussion about the effect of trade unions on wages, it has been taken for granted that the efficiency of the workpeople remains the same; but as a matter of fact trade unions may build up or undermine the efficiency upon which depends the joy of working as well as the external product of working. The organisation of labour means its professionalising, so to speak, which may create a pride of calling and a high standard of work and conduct; but, on the other hand, efficiency must be lessened when the policy of slacking with a view to extensifying the demand for labour is adopted—a policy which is suicidal, because we all tend to become what we consistently pretend to be, and because character is not left unhurt by shamming—but we must not confound with such a policy resistance against the over-driving which wears people out.

From time to time readjustments of wages are essential. Unfortunately it usually happens that such readjustments are accompanied by industrial warfare in the form of strikes and lock-outs, which are wasteful of productive energy and leave behind them such embittered feelings that it becomes difficult for the smooth working of society on its economic side to be resumed. I propose now to consider whether a greater degree of peaceableness cannot be insinuated into such of the re-arrangements of wages as in justice and fact are unavoidable.

When we face this problem, in which are involved not only economic elements, narrowly conceived, but also subtle social elements that defy dogmatic definition and afford no sufficiently firm foundation for unhesitating pronouncements, so that in dealing with it one's own peculiar bias cannot be altogether shut out, the thought will instantly occur that the civilised method of the law-courts might be adapted for the settlement of wages disputes. It is in the law-courts that many other business disputes are settled. But this thought will arise only to be dismissed, except as regards minor disagreements or divergent interpretations of existing contracts, when we keep our attention steadily fixed on needs and

possibilities in such an industrial country as England at the present time. The method would not be acceptable to the majority of employers or employees, and it is highly doubtful, despite the triumphs of different forms of industrial arbitration in New Zealand and Australia, whether the method would prove workable, at any rate under conditions such as we may reasonably forecast for our lifetime, in the enormously complicated interrelation of industries in advanced western countries.

The wages problem in such surroundings is a profoundly difficult one because, our productive energies being guided by foresight, wages may be regarded as governed by the reflection in anticipation of consumers' innumerable demands on the one hand and the supplies of capital, labour and organising sagacity of their multitudinous kinds on the other side. Moreover consumers' demands and the relative supplies of the different agents in production are constantly varying, so that the wages problem calls repeatedly for resettlement. Now it is imperative that at each settlement the right wage should be approximately hit upon, because it is only when the right wage is discovered, and discovered rapidly, that production is kept appropriate

to the needs of the community, and is projected on such a scale that the whole of the employable population tends to be employed. By the right wage I mean the wage which accurately represents the equilibrium which would be brought about by the forces described if they worked in a frictionless medium, which society is not. Can we be sure that in the pleading of a case before an arbitrator it would be possible to make these forces explicit and adequately to express them? Moreover, can we be sure that the arbitrator would always, or commonly, be possessed of that insight which would enable him properly to appreciate and duly to balance the testimony laid before him?

Arbitration over small points and the interpretation of existing contracts is quite another matter. In this matter it is folly not to use to the full the judicial referee. But the industrialised western world has hitherto shown itself distrustful, and not without reason, of the method of the law-courts in its application to labour disagreements which do not arise out of the reading of existing undertakings. It seems to feel instinctively that the forces expressed in demand and supply must be left by their interplay to bring about their own position

of rest. But unhappily their interplay generates heat, particularly when it is resisted, and may take place in an atmosphere of misunderstanding, so that the process of accommodation is broken and strikes and lock-outs all too frequently supervene. Moreover, an outbreak once entered upon, it is not unlikely that might instead of right will prevail. The practical problem which confronts us at the moment, with people's prejudices and predilections as they are, would seem to be so to smooth the process whereby wages are naturally settled that appropriate decisions may be reached without cessation of work.

In England much has been done by joint wages boards and voluntary conciliation to humanise and nationalise procedure in wages readjustments. In 1896 the Board of Trade was given a status for mediating, and in 1911 the official machinery for settling and preventing industrial disputes was strengthened by the appointment of a board representative of employers' and workpeople's interests.

So far the action of mediators and of Government officials, in particular of late years, has had the most encouraging results. No compulsion is exercised: but it must be noted that special legislation was

adopted recently to meet an exceptional case. Successes are achieved by preventing temper and misunderstanding from causing a premature breach in negotiations—by holding together in dispassionate discussion the representatives of the parties to disputes, who, with their knowledge of the trade, may be regarded as capable of expressing the considerations by a due balancing of which the right wage is reached—and, moreover, by making, out of a large experience, helpful suggestions. Where their organisation is far advanced it has become usual for operatives and employers to enter into a compact to allow neither strike nor lock-out until a joint meeting has been held. It might conduce incalculably to industrial peace if to these compacts a clause were commonly added that, on the failure of the joint meeting to reach agreement, strikes or lock-outs should be still further deferred until reference had been made to the Board of Trade; and if, moreover, unorganised labour and weakly organised labour and employers who are not at present direct or indirect parties to such compacts could be induced to fall in with the proposal. Prompt action would, of course, be essential. Canada has legislated to further such a reference to the State. In other

western countries the methods of industrial peace are not unlike those of England.

The generation of friction by the processes taking place in the labour market, as compared with the relatively amicable bargaining which goes on continually where goods are bought and sold, has nothing mysterious in its origins. It is easier to be dispassionate in selling our services indirectly, in the form of what we have made, or acquired as traders to dispose of, than in selling them directly as the workman does who is bargaining about his wages. As practical economists we must admit all facts of this kind into our reckoning, and allow for the danger of leaving some things to be settled by the undisguised and unmitigated action of demand and supply.

Just as there are cases, calling for special consideration, in which serious friction is generated by the unrestrained interplay of economic forces, so there are other cases, equally calling for special consideration, in which harm results because the economic forces which would normally be working in the interests of a class are so smothered as not to be properly effective. We have examples in many miserably paid callings, and in much of the casual labour system.

To the extremely low-paid occupations attention has been frequently and authoritatively directed, but it is only of late that an experimental handling of the problem of "sweating," as it is called, has been attempted. A brief survey of this abuse will shew, as the scientific mind would expect, that its thorough cure is bound up with its causes, and that in the search for its causes economic analysis is an undoubted aid. The theory of wages expounded in Chapter VII. of this work lays it down that wages tend to equal the marginal worth of labour. Then, seemingly, a search for the causes of sweating should reveal that in certain circumstances labour tends for some reason to get substantially less than its marginal worth, which may be very low in addition, or that it is incapable of raising its wage without help, either by improving in efficiency or by moving to trades where the recompense for work is on a more generous scale. Actually it will be found that some or all these disabilities exist in the sweated trades, particularly among out-workers, and most of the worst paid people are out-workers.

Many out-workers are very inefficient because they have never been trained. And their work is very unskilled as a rule,

or requires merely a dexterity which can easily be acquired by anybody, so that it is the common resort of persons brought up to nothing who suddenly find it necessary to do something at home to make or add to an income. Consequently there is apt to be an over-supply of out-workers. Moreover much that they do competes with production by machinery or semi-domestic work. In so far as there is competition with machinery, the rate of remuneration of out-workers must be comparatively paltry if they are to secure employment at all. And so must their rate of pay be also when, in the case of simple sewing work for domestic needs, they come sharply into competition with consumers who ordinarily sew for themselves and reckon the cost very low because the work is to a large extent occupation for idle moments.

Furthermore, there are good reasons for believing that the pay of out-workers is disposed to settle below rather than at their marginal worth. Their strategic position is weak. They are mostly poor and ignorant and they are always unorganised, so that they cannot effectively resist what seems to them unreasonable in the individual bargains by which they are bound; and they may not

know of a better way of making a living, or, if they do, how to fit themselves for it, when their circumstances or inertia do not bar escape from their miserable plight, as they so frequently do. In addition, from the employing side, forces may come into play which tend to cause a down-drift of wages. Some employers may pay very low rates because they are grasping, or cannot pay more; but, whatever the cause, low rates once paid anywhere are apt to bring down other rates. Even generously disposed employers may complain of unfair competition and feel themselves forced to follow suit; and the influences on the side of supply which should drive the incapable employer out of the field are inoperative. Again, given the absence of an outbreak of under-pay anywhere, there is always the suspicion of its presence, and this alone helps to depress rates. Besides it must be remembered that even when rates are not scandalously low, earnings may be, because of the disorganisation of the work, which means that people are frequently under-employed, though frequently rushed, and that their time is wasted in more ways than one. And as things are, there is a vicious circle of cause and effect always working harm. The poorer out-workers become, the weaker becomes their

resisting power and the lower becomes their efficiency.

If this diagnosis—a diagnosis to which economic theory has led us—is correct, the cure for the species of sweating which has been selected for examination consists in measures which will raise the efficiency of ill-paid workers, bring about the removal of some of them to occupations for which a greater reward is obtainable, and check the tendencies which are driving their wages beneath their marginal worth.

The problem of casual labour is usually envisaged as distinct from that of sweating, but the two are neighbouring species of one genus. In most cases of casual labour we meet again with an over-supply of labour which has sunk down, or has always been down, and is without the knowledge, energy, or training, which should bring about the dispersal of the surplus among other trades, while at the same time the individual bargain and disorganised demand flourish so that time is wasted in finding work and nobody is fully occupied. Again the solution is organisation and the fostering of social forces which in this particular case are atrophied or undeveloped. It is important that steps should be taken to reform the

sluggish economic conditions the consequences of which are misdirected efforts, wretched lives and appalling waste; but it is even more important that their perpetuation should be stopped. For their perpetuation the undirected drift of many in the rising generation at the critical age, owing to lack of advice and neglect of training, is largely responsible.

The problem of unemployment overlaps that last considered: it is the product of causes which from a long-period and highly abstract conception of economic conditions are provisionally ruled out. For a reasonable plan of action we must look to a careful study of the facts and their appropriate interpretation in the light of a theory which is closely reasoned but at the same time receptive of new ideas.

“Facts alone are wanted in life. Plant nothing else and root out everything else. You can only form the minds of reasoning animals upon Facts: nothing else will ever be of any service to them.” Thus Mr. Gradgrind delivered his perverted mind in *Hard Times*. If he was right this book is a huge mistake, for, to the best of my knowledge, it is

quite devoid of facts—of facts as they were conceived by Dickens' embodiment of a dry and inflexible commercial philosophy, or negation of philosophy. It would be somewhat late in these closing words to defend my envisagement of the real elements of Political Economy—which are not such facts—and it is now unnecessary after the remarks contained in the Introduction and others scattered throughout the book. Nevertheless a few observations may be offered, as much by way of summary as of supplement, concerning the nature, sphere and limitations of economic theory, the true elemental fact which transforms discussion of economic problems from haphazard empiricism into a science.

Every student of Economics who thinks for himself is bound, from time to time, to feel with something of a shock the contrast between what he sees and hears in the world as it is on the one side and what he has learnt on the other side. He may search in vain for the marginal "dose," and find the conception of the marginal return in a firm foreign to the business mind and underivable from ledgers ; he may see workmen arranged in trade clusters which seems as little likely to be recruited from each other as flocks of

sheep from herds of deer, and the notion that labour has a supply price for each purpose may seemingly stand exposed as a pure fabrication; and, watching the course of a labour dispute, after the most patient and microscopic scrutiny, he may detect not the faintest reference to the marginal worth of labour, but, on the contrary, be rudely forced against his armchair convictions to adopt the view that the success of the men depends upon the financial resources of their union, the astuteness and vigour of their chief officials and the pliability of employers. All that may thus be seen is real—fact which is not to be blinked—but to wipe out the refinements of theory when we admit this is like refusing to believe in radio-activity because we cannot observe it with the naked eye. The most highly endowed and best trained scientific mind will accept every theory to which reason compels assent, however dilatory and minute the tendencies covered by it, and at the same time reject no facts, however individual and exceptional, because they seem to be outside accepted theories. A complete Economic Science may be imaged as a weird pyramid with an extensive base (of the earth earthy), made up of tangible facts just theorised enough to hold together, but an apex (rarefied

like the atmosphere of reason in which it is enshrouded), made up of thought with just enough of fact to give it substance, and, in between, layer upon layer of more or less highly generalised experience. In this work we have exercised our intellects rather than our senses, in the main, and kept our attention focussed on the apex ; but in the present chapter portions of some intermediate layers have been worked through, partly for utilitarian reasons, but partly also to afford an object lesson of the manner in which abstract theory may be an aid, though not the sole agency, in the solution of practical problems. Had the limitations of these volumes permitted, the same thing might have been done as regards other problems, and it might have been demonstrated that in the settlement of business policy, in matters of taxation and the function of the State with reference to industry, commerce and social conditions, economic theory furnishes, if not complete solutions, at least suggestions and indications without which we could never make a start. At the same time, however, for any handling of these problems worth having, a study of quite another order is called for, namely the study of ends or ideals.

To remove all flaws from social conditions

and accomplish the good and great is the wish of every age in its most exalted mood, but intuition will not satisfy this wish, and movement backed by confused ideas means mere bustle without achievement. The nature of man and of the product of his gregariousness in society must be explored, if social efforts are not to meet with disappointment, and in their exploration we shall find ourselves studying now Ethics and Psychology, now Political Science and Sociology, and now the romance of History. The investigation of ends or idéals is out of the question in these closing pages, but expression may be given to two thoughts connected with the bearing of abstract economics on their construction. It is an error—from which the past has suffered—to suppose that the ideal social system must necessarily be very like the one now pictured by the abstract economist when for purposes of theory he removes social friction. Yet, economic theory may afford help in testing the workableness of schemes of reform; but we must be on our guard against trusting over much to the infallibility of the economic test when it is abstract, and against assuming too readily that circumstances are unmodifiable when our economic test is realistic—though, granting that “we were fishes and may become

crows," as a famous truth has been ironically put, it is certain that the limits set to the modifiability both of human nature and of existing economic laws of a social kind are not exceedingly remote

NOTE ON BOOKS

THOSE who desire to make a further study of Political Economy are advised to peruse next some comprehensive work of an intermediate size. Works of this kind are numerous. The following have appeared in England :—Flux, *Economic Principles* ; Nicholson, *Elements of Political Economy* ; and my own *Outlines of Political Economy*. The following have appeared in the United States :—Bullock, *Introduction to the Study of Economics* ; Ely, *Outlines of Economics* ; Fetter, *Principles of Economics* ; Hadley, *Economics* ; Seagar, *Introduction to Economics* ; Seligman, *Principles of Economics* ; and Walker, *Political Economy*. In addition there is a book by Gide on *Political Economy* which has been translated from the French into English.

After reading one of these volumes the student who aims at thoroughness should work through Marshall's *Principles of Economics*, which is the authoritative treatise on theory, but does not cover money, foreign trade and public economics and finance. Large comprehensive treatises, which, however, are not substitutes for Marshall's *Principles* in respect of the subjects included in the latter, have been penned by Nicholson (3 vols.), Taussig (2 vols.), and Pierson (in Dutch, of which only the first volume has been translated). Wicksteed's *Common Sense of Political Economy* may also be mentioned, together with Panteleoni's *Pure Economics* (translated).

Mathematicians who are interested in theory should carefully study the mathematical appendix to Marshall's *Principles*, and consult in addition Edgeworth's *Mathematical Psychics*, the mathematical appendix to Flux's

Economic Principles, Cunnninghame's *Geometry of Political Economy*, and the mathematical and semi-mathematical articles in the *Economic Journal*.

The *Economic Journal* is the organ of the Royal Economic Society. The organ of the American Economic Association is the *American Economic Review*. There are numerous other journals of Political Economy published in the United States. Their contents are indicated in each number of the *American Economic Review*, and in each number of the (British) *Economic Journal*. The latter notices also economic articles in any English reviews. Palgrave's *Dictionary of Political Economy* will be found useful by everybody.

The development of economic ideas is traced in Bonar's *Philosophy and Political Economy*, Cannan's *History of Theories of Production and Distribution in England*, Cossa's *Guide to the Study of Political Economy*, Ingram's *History of Political Economy*, and Price's *Political Economy in England*.



INDEX

- ADAM SMITH, 11-12, 13
 Analytical method, 19-27
 Arbitration, 238-241
 Barter, 116
 Bentham, 17
 Bimetallism, 141-144
 Capital, 177-180, 223-9
 Comparative values, 152-7
 Conciliation, 241-3
 Consumers' Surplus, 48-56
 Decreasing Returns, 68, 71-3
 Demand, Definition, 39-41
 Demand, Elasticity of, 41-2
 Diminishing utility, 35-9
 Discriminative prices, 100-111
 Dumping, 105-111
 Economic man, 26-7
 Employer's remuneration, 183-193
 Goodwin, 18
 Hours of labour, 222
 Increasing returns, 68, 71-3
 Induction, 27-8
 Interest, 180-183
 Jevons, 8, 19
 Laissez faire, 14, 15
 Long and short periods 29-30, 31
 Marginal quality, 58-9
 Marshall, 8, 19, 20, 48, 56
 Mill, 16-17, 19, 164-5
 Prices, Variations of, 137-141
 Producers' surplus, 220-2
 Production, Agents in, 89-91
 Production, Cost of, 63-7, 98-100
 Quantity theory of money, 123-5
 Rent, Situational, 206-7
 Rent, Personal, 213-5
 Reserves, 126-7, 130-3
 Ricardo, 13, 16
 Ruskin, 15, 60
 Standard of life, 47
 Sweating, 244-7
 Trade cycles, 133-7
 Trade-unions, 229-237
 Utility, 33-5
 Value, Definitions, 59-62
 Wages, Theory of, 169-177
 Walras, 8, 19
 Wealth, 59-60

The Home University Library of Modern Knowledge

*A Comprehensive Series of New
and Specially Written Books*

EDITORS:

PROF. GILBERT MURRAY, D.Litt., LL.D., F.B.A.

HERBERT FISHER, M.A., F.B.A.

PROF. J. ARTHUR THOMSON, M.A.

PROF. WM. T. BREWSTER, M.A.

The Home University Library

"Is without the slightest doubt the pioneer in supplying serious literature for a large section of the public who are interested in the liberal education of the State."—*The Daily Mail*.

"It is a thing very favourable to the real success of The Home University Library that its volumes do not merely attempt to feed ignorance with knowledge. The authors noticeably realise that the simple willing appetite of sharp-set ignorance is not specially common nowadays; what is far more common is a hunger which has been partially but injudiciously filled, with more or less serious results of indigestion. The food supplied is therefore frequently medicinal as well as nutritious; and this is certainly what the time requires."—*Manchester Guardian*.

"Each volume represents a three-hours' traffic with the talking-power of a good brain, operating with the ease and interesting freedom of a specialist dealing with his own subject. . . . A series which promises to perform a real social service."—*The Times*.

"We can think of no series now being issued which better deserves support."—*The Observer*.

"We think if they were given as prizes in place of the more costly rubbish that is wont to be dispensed on prize days, the pupils would find more pleasure and profit. If the publishers want a motto for the series they might well take: '*Infinite riches in a little room*.'"—*Irish Journal of Education*.

"The scheme was successful at the start because it met a want among earnest readers; but its wider and sustained success, surely, comes from the fact that it has to a large extent created and certainly refined the taste by which it is appreciated."—*Daily Chronicle*.

"Here is the world's learning in little, and none too poor to give it house-room!"—*Daily Telegraph*.

1/- net
in cloth

256 Pages

2/6 net
in leather

History and Geography

3. THE FRENCH REVOLUTION

By HILAIRE BELLOC, M.A. (With Maps.) "It is coloured with all the militancy of the author's temperament."—*Daily News*.

4. HISTORY OF WAR AND PEACE

By G. H. PERRIS. The Rt. Hon. JAMES BRYCE writes: "I have read it with much interest and pleasure, admiring the skill with which you have managed to compress so many facts and views into so small a volume."

8. POLAR EXPLORATION

By Dr W. S. BRUCE, F.R.S.E., Leader of the "Scotia" Expedition. (With Maps.) "A very freshly written and interesting narrative."—*The Times*. "A fascinating book."—*Portsmouth Times*.

12. THE OPENING-UP OF AFRICA

By Sir H. H. JOHNSTON, G.C.M.G., K.C.B., D.Sc., F.R.S. (With Maps.) "The Home University Library is much enriched by this excellent work."—*Daily Mail*.

13. MEDIEVAL EUROPE

By H. W. C. DAVIS, M.A. (With Maps.) "One more illustration of the fact that it takes a complete master of the subject to write briefly upon it."—*Manchester Guardian*.

14. THE PAPACY & MODERN TIMES (1303-1870)

By WILLIAM BARRY, D.D. "Dr Barry has a wide range of knowledge and an artist's power of selection."—*Manchester Guardian*.

23. HISTORY OF OUR TIME, 1885-1911

By G. P. GOOCH, M.A. "Mr Gooch contrives to breathe vitality into his story, and to give us the flesh as well as the bones of recent happenings."—*Observer*.

25. THE CIVILISATION OF CHINA

By H. A. GILES, LL.D., Professor of Chinese in the University of Cambridge. "In all the mass of facts, Professor Giles never becomes dull. He is always ready with a ghost story or a street adventure for the reader's recreation."—*Spectator*.

29. THE DAWN OF HISTORY

By J. L. MYRES, M.A., F.S.A., Wykeham Professor of Ancient History, Oxford. "There is not a page in it that is not suggestive."—*Manchester Guardian*.

33. THE HISTORY OF ENGLAND:

A Study in Political Evolution.

By Prof. A. F. POLLARD, M.A. With a Chronological Table. "It takes its place at once among the authoritative works on English history."—*Observer*.

34. CANADA

By A. G. BRADLEY. "Who knows Canada better than Mr A. G. Bradley?"—*Daily Chronicle*. "The volume makes an immediate appeal to the man who wants to know something vivid and true about Canada."—*Canadian Gazette*.

37. PEOPLES & PROBLEMS OF INDIA

By Sir T. W. HOLDERNESS, K.C.S.I., Secretary of the Revenue, Statistics, and Commerce Department of the India Office. "Just the book which newspaper readers require to-day, and a marvel of comprehensiveness."—*Pail Mall Gazette*.

42. ROME

By W. WARDE FOWLER, M.A. "A masterly sketch of Roman character and of what it did for the world."—*The Spectator*. "It has all the lucidity and charm of presentation we expect from this writer."—*Manchester Guardian*.

48. THE AMERICAN CIVIL WAR

By F. L. PAXSON, Professor of American History, Wisconsin University. (With Maps.) "A stirring study."—*The Guardian*.

51. WARFARE IN BRITAIN

By HILAIRE BELLOC, M.A. An account of how and where great battles of the past were fought on British soil, the roads and physical conditions determining the island's strategy, the castles, walled towns, etc.

55. MASTER MARINERS

By J. R. SPEARS. The romance of the sea, the great voyages of discovery, naval battles, the heroism of the sailor, and the development of the ship, from ancient times to to-day.

IN PREPARATION

ANCIENT GREECE. By Prof. GILBERT MURRAY, D.Litt., LL.D., F.B.A.

ANCIENT EGYPT. By F. L. GRIFFITH, M.A.

THE ANCIENT EAST. By D. G. HOGARTH, M.A., F.B.A.

A SHORT HISTORY OF EUROPE. By HERBERT FISHER, M.A., F.B.A.

PREHISTORIC BRITAIN. By ROBERT MUNRO, M.A., M.D., LL.D.

THE BYZANTINE EMPIRE. By NORMAN H. BAYNES.

THE REFORMATION. By Principal LINDSAY, LL.D.

NAPOLEON. By HERBERT FISHER, M.A., F.B.A.

A SHORT HISTORY OF RUSSIA. By Prof. MILYUKOV.

MODERN TURKEY. By D. G. HOGARTH, M.A.

FRANCE OF TO-DAY. By ALBERT THOMAS.

GERMANY OF TO-DAY. By CHARLES TOWER.

THE NAVY AND SEA POWER. By DAVID HANNAY.

HISTORY OF SCOTLAND. By R. S. RAIT, M.A.

SOUTH AMERICA. By Prof. W. R. SHEPHERD.

LONDON. By Sir LAURENCE GOMME, F.S.A.

HISTORY AND LITERATURE OF SPAIN. By J. FITZMAURICE-KELLY, F.B.A., Litt.D.

Literature and Art

2. SHAKESPEARE

By JOHN MASEFIELD. "The book is a joy. We have had half-a-dozen more learned books on Shakespeare in the last few years, but not one so wise."—*Manchester Guardian*.

27. ENGLISH LITERATURE: MODERN

By G. H. MAIR, M.A. "Altogether a fresh and individual book."—*Observer*.

35. LANDMARKS IN FRENCH LITERATURE

By G. L. STRACHEY. "Mr Strachey is to be congratulated on his courage and success. It is difficult to imagine how a better account of French Literature could be given in 250 small pages than he has given here."—*The Times*.

39. ARCHITECTURE

By Prof. W. R. LETHABY. (Over forty Illustrations.) "Popular guide-books to architecture are, as a rule, not worth much. This volume is a welcome exception."—*Building News*. "Delightfully bright reading."—*Christian World*.

43. ENGLISH LITERATURE: MEDIÆVAL

By Prof. W. P. KER, M.A. "Prof. Ker has long proved his worth as one of the soundest scholars in English we have, and he is the very man to put an outline of English Mediæval Literature before the uninstructed public. His knowledge and taste are unimpeachable, and his style is effective, simple, yet never dry."—*The Athenæum*.

45. THE ENGLISH LANGUAGE

By L. PEARSALL SMITH, M.A. "A wholly fascinating study of the different streams that went to the making of the great river of the English speech."—*Daily News*.

52. GREAT WRITERS OF AMERICA

By Prof. J. ERSKINE and Prof. W. P. TRENT. A popular sketch by two foremost authorities.

IN PREPARATION

ANCIENT ART AND RITUAL. By Miss JANE HARRISON, LL.D., D.Litt.

GREEK LITERATURE. By Prof. GILBERT MURRAY, D.Litt.

LATIN LITERATURE. By Prof. J. S. PHILLIMORE.

CHAUCER AND HIS TIME. By Miss G. E. HADOW.

THE RENAISSANCE. By Mrs R. A. TAYLOR.

ITALIAN ART OF THE RENAISSANCE. By ROGER E. FRY, M.A.

THE ART OF PAINTING. By Sir FREDERICK WEDMORE.

DR JOHNSON AND HIS CIRCLE. By JOHN BAILEY, M.A.

THE VICTORIAN AGE. By G. K. CHESTERTON.

ENGLISH COMPOSITION. By Prof. WM. T. BREWSTER.

GREAT WRITERS OF RUSSIA. By C. T. HAGBERG WRIGHT, LL.D.

THE LITERATURE OF GERMANY. By Prof. J. G. ROBERTSON, M.A., Ph.D.

SCANDINAVIAN HISTORY AND LITERATURE. By T. C. SNOW, M.A.

Science

7. MODERN GEOGRAPHY

By Dr MARION NEWBIGIN. (Illustrated.) "Geography, again: what a dull, tedious study that was wont to be! . . . But Miss Marion Newbigin invests its dry bones with the flesh and blood of romantic interest, taking stock of geography as a fairy-book of science."—*Daily Telegraph*.

9. THE EVOLUTION OF PLANTS

By Dr D. H. SCOTT, M.A., F.R.S., late Hon. Keeper of the Jodrell Laboratory, Kew. (Fully illustrated.) "The information which the book provides is as trustworthy as first-hand knowledge can make it. . . . Dr Scott's candid and familiar style makes the difficult subject both fascinating and easy."—*Gardeners' Chronicle*.

17. HEALTH AND DISEASE

By W. LESLIE MACKENZIE, M.D., Local Government Board, Edinburgh. "The science of public health administration has had no abler or more attractive exponent than Dr Mackenzie. He adds to a thorough grasp of the problems an illuminating style, and an arresting manner of treating a subject often dull and sometimes unsavoury."—*Economist*.

18. INTRODUCTION TO MATHEMATICS

By A. N. WHITEHEAD, Sc.D., F.R.S. (With Diagrams.) "Mr Whitehead has discharged with conspicuous success the task he is so exceptionally qualified to undertake. For he is one of our great authorities upon the foundations of the science, and has the breadth of view which is so requisite in presenting to the reader its aims. His exposition is clear and striking."—*Westminster Gazette*.

19. THE ANIMAL WORLD

By Professor F. W. GAMBLE, D.Sc., F.R.S. With Introduction by Sir Oliver Lodge. (Many Illustrations.) "A delightful and instructive epitome of animal (and vegetable) life. . . . A most fascinating and suggestive survey."—*Morning Post*.

20. EVOLUTION

By Professor J. ARTHUR THOMSON and Professor PATRICK GEDDES. "A many-coloured and romantic panorama, opening up, like no other book we know, a rational vision of world-development."—*Belfast News-Letter*.

22. CRIME AND INSANITY

By Dr C. A. MERCIER, F.R.C.P., F.R.C.S., Author of "Text-Book of Insanity," etc. "Furnishes much valuable information from one occupying the highest position among medico-legal psychologists."—*Asylum News*.

28. PSYCHICAL RESEARCH

By Sir W. F. BARRETT, F.R.S., Professor of Physics, Royal College of Science, Dublin, 1873-1910. "As a former President of the Psychical Research Society, he is familiar with all the developments of this most fascinating branch of science, and thus what he has to say on thought-reading, hypnotism, telepathy, crystal-vision, spiritualism, divinings, and so on, will be read with avidity."—*Dundee Courier*.

31. ASTRONOMY

By A. R. HINKS, M.A., Chief Assistant, Cambridge Observatory. "Original in thought, eclectic in substance, and critical in treatment. . . . No better little book is available."—*School World*.

32. INTRODUCTION TO SCIENCE

By J. ARTHUR THOMSON, M.A., Regius Professor of Natural History, Aberdeen University. "Professor Thomson's delightful literary style is well known; and here he discourses freshly and easily on the methods of science and its relations with philosophy, art, religion, and practical life."—*Aberdeen Journal*.

36. CLIMATE AND WEATHER

By H. N. DICKSON, D.Sc. Oxon., M.A., F.R.S.E., President of the Royal Meteorological Society; Professor of Geography in University College, Reading. (With Diagrams.) "The author has succeeded in presenting in a very lucid and agreeable manner the causes of the movement of the atmosphere and of the more stable winds."—*Manchester Guardian*.

41. ANTHROPOLOGY

By R. R. MARETT, M.A., Reader in Social Anthropology in Oxford University. "An absolutely perfect handbook, so clear that a child could understand it, so fascinating and human that it beats fiction to a frazzle."—*Morning Leader*.

44. THE PRINCIPLES OF PHYSIOLOGY

By Prof. J. G. MCKENDRICK, M.D. "It is a delightful and wonderfully comprehensive handling of a subject which, while of importance to all, does not readily lend itself to untechnical explanation. . . . The little book is more than a mere repository of knowledge; upon every page of it is stamped the impress of a creative imagination."—*Glasgow Herald*.

46. MATTER AND ENERGY

By F. SODDY, M.A., F.R.S. "A most fascinating and instructive account of the great facts of physical science, concerning which our knowledge, of later years, has made such wonderful progress."—*The Bookseller*.

49. PSYCHOLOGY, THE STUDY OF BEHAVIOUR

By Prof. W. McDUGALL, F.R.S., M.B. "A happy example of the non-technical handling of an unwieldy science, suggesting rather than dogmatizing. It should whet appetites for deeper study."—*Christian World*.

53. THE MAKING OF THE EARTH

By Prof. J. W. GREGORY, F.R.S. (With 38 Maps and Figures.) The Professor of Geology at Glasgow describes the origin of the earth, the formation and changes of its surface and structure, its geological history, the first appearance of life, and its influence upon the globe.

57. THE HUMAN BODY

By A. KEITH, M.D., LL.D., Conservator of Museum and Hunterian Professor, Royal College of Surgeons. (Illustrated.) The work of the dissecting-room is described, and among other subjects dealt with are: the development of the body; malformations and monstrosities; changes of youth and age; sex differences, are they increasing or decreasing? race characters; bodily features as indexes of mental character; degeneration and regeneration; and the genealogy and antiquity of man.

58. ELECTRICITY

By GIBBERT KAPP, D.Eng., M.I.E.E., M.I.C.E., Professor of Electrical Engineering in the University of Birmingham. (Illustrated.) Deals with frictional and contact electricity; potential; electrification by mechanical means; the electric current; the dynamics of electric currents; alternating currents; the distribution of electricity, etc.

IN PREPARATION

CHEMISTRY. By Prof. R. MELDOLA, F.R.S.

THE MINERAL WORLD. By Sir T. H. HOLLAND, K.C.I.E., D.Sc.

PLANT LIFE. By Prof. J. B. FARMER, F.R.S.

NERVES. By Prof. D. FRASER HARRIS, M.D., D.Sc.

A STUDY OF SEX. By Prof. J. A. THOMSON and Prof. PATRICK GEDDIS.

THE GROWTH OF EUROPE. By Prof. GRENVILLE COLE.

Philosophy and Religion

15. MOHAMMEDANISM

By Prof. D. S. MARGOLIOUTH, M.A., D.Litt. "This generous shilling's worth of wisdom. . . A delicate, humorous, and most responsible tractate by an illuminative professor."—*Daily Mail*.

40. THE PROBLEMS OF PHILOSOPHY

By the Hon. BERTRAND RUSSELL, F.R.S. "A book that the 'man in the street' will recognise at once to be a boon. . . Consistently lucid and non-technical throughout."—*Christian World*.

47. BUDDHISM

By Mrs RHYS DAVIDS, M.A. "A very able and concise 'study of the Buddhist norm. . . The author presents very attractively as well as very learnedly the philosophy of Buddhism as the greatest scholars of the day interpret it."—*Daily News*.

50. NONCONFORMITY: Its ORIGIN and PROGRESS

By Principal W. B. SELBIE, M.A. "The historical part is brilliant in its insight, clarity, and proportion, and in the later chapters on the present position and aims of Nonconformity Dr Selbie proves himself to be an ideal exponent of sound and moderate views."—*Christian World*.

54. ETHICS

By G. E. MOORE, M.A., Lecturer in Moral Science in Cambridge University. Discusses Utilitarianism, the Objectivity of Moral Judgments, the Test of Right and Wrong, Free Will, and Intrinsic Value.

56. THE MAKING OF THE NEW TESTAMENT

By Prof. B. W. BACON, LL.D., D.D. An authoritative summary of the results of modern critical research with regard to the origins of the New Testament, in "the formative period when conscious inspiration was still in its full glow rather than the period of collection into an official canon," showing the mingling of the two great currents of Christian thought—"Pauline and 'Apostolic,' the Greek-Christian gospel *about* Jesus, and the Jewish-Christian gospel *of* Jesus, the gospel of the Spirit and the gospel of authority."

60. MISSIONS: THEIR RISE and DEVELOPMENT

By Mrs CREIGHTON. The beginning of modern missions after the Reformation and their growth are traced, and an account is given of their present work, its extent and character.

IN PREPARATION

THE OLD TESTAMENT. By Prof. GEORGE MOORE, D.D., LL.D.
BETWEEN THE OLD AND NEW TESTAMENTS. By R. H. CHARLES, D.D.

COMPARATIVE RELIGION. By Prof. J. ESTLIN CARPENTER, D.Litt.
A HISTORY of FREEDOM of THOUGHT. By Prof. J. B. BURY, LL.D.
A HISTORY OF PHILOSOPHY. By CLEMENT WEBB, M.A.

Social Science

I. PARLIAMENT

Its History, Constitution, and Practice. By Sir COURTENAY P. ILBERT, M.C.B., K.C.S.I., Clerk of the House of Commons. "The best book on the history and practice of the House of Commons since Bagehot's 'Constitution.'"—*Yorkshire Post*.

5. THE STOCK EXCHANGE

By F. W. HIRST, Editor of "The Economist." "To an unfinancial mind must be a revelation. . . . The book is as clear, vigorous, and sane as Bagehot's 'Lombard Street,' than which there is no higher compliment."—*Morning Leader*.

6. IRISH NATIONALITY

By Mrs J. R. GREEN. "As glowing as it is learned. No book could be more timely."—*Daily News*. "A powerful study. . . . A magnificent demonstration of the deserved vitality of the Gaelic spirit."—*Freeman's Journal*.

10. THE SOCIALIST MOVEMENT

By J. RAMSAY MACDONALD, M.P. "Admirably adapted for the purpose of exposition."—*The Times*. "Mr MacDonald is a very lucid exponent. . . . The volume will be of great use in dispelling illusions about the tendencies of Socialism in this country."—*The Nation*.

11. CONSERVATISM

By Lord HUGH CECIL, M.A., M.P. "One of those great little books which seldom appear more than once in a generation."—*Morning Post*.